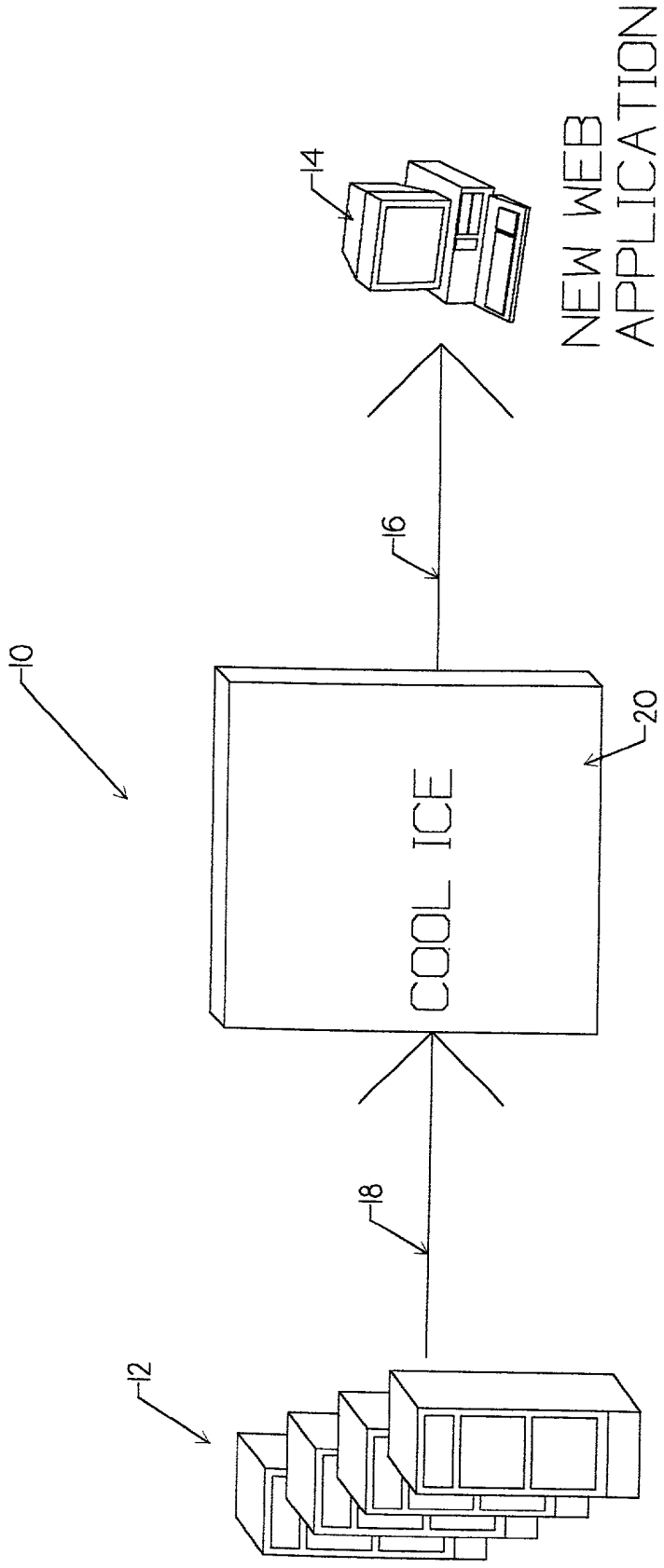
NEW WEB APPLICATION
14
16
10
COOL ICE
20
18
12
EXISTING DATABASES AND APPLICATIONS

FIG. 1

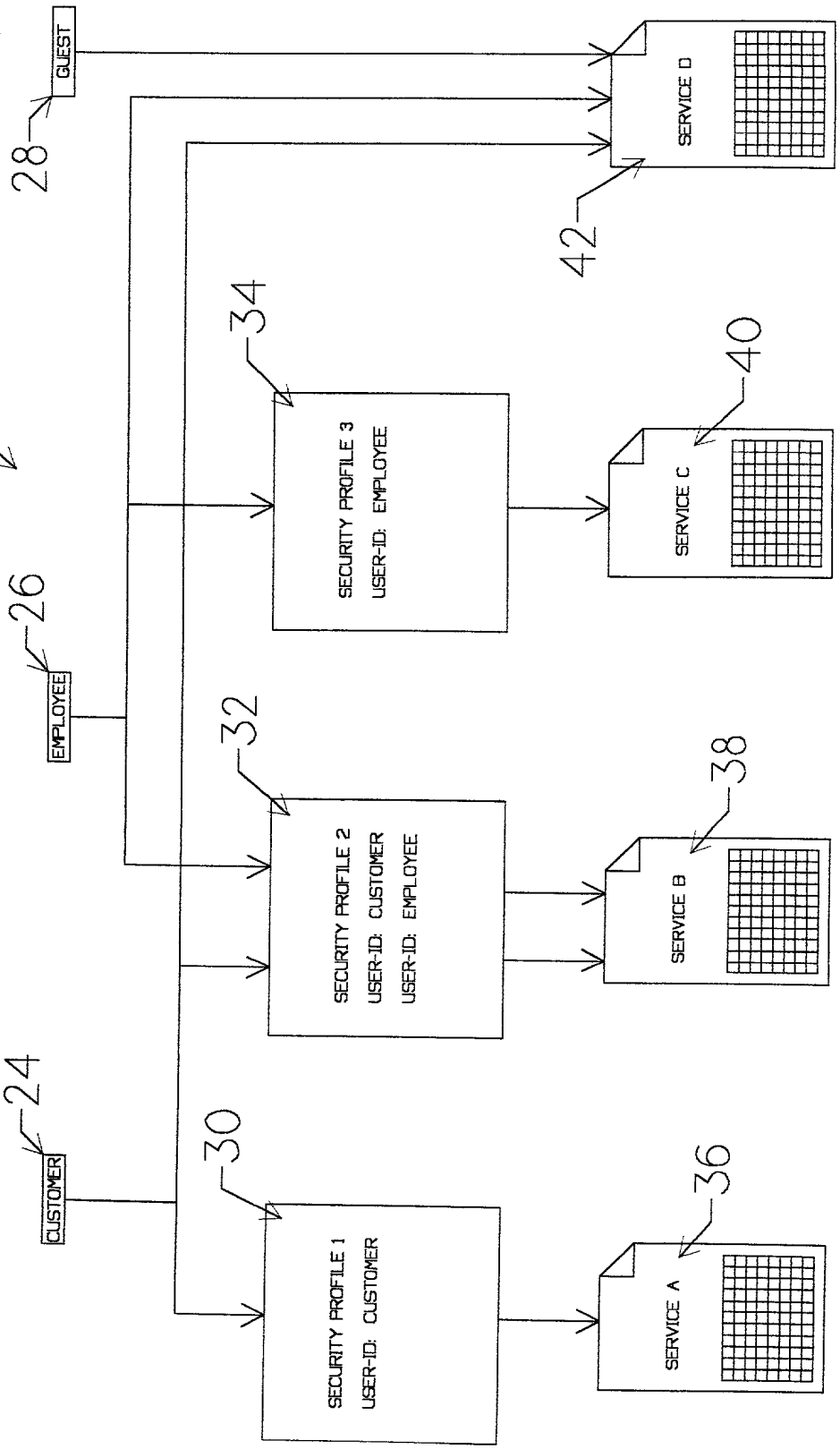
22
GUEST
28
SERVICE D
42
34
SECURITY PROFILE 3
USER-ID: EMPLOYEE
40
SERVICE C
26
EMPLOYEE
32
SECURITY PROFILE 2
USER-ID: CUSTOMER
USER-ID: EMPLOYEE
38
SERVICE B
24
CUSTOMER
30
SECURITY PROFILE 1
USER-ID: CUSTOMER
36
SERVICE A

FIG. 2

Express Mail No. ET970414370US
Customer Assignment No. 27516

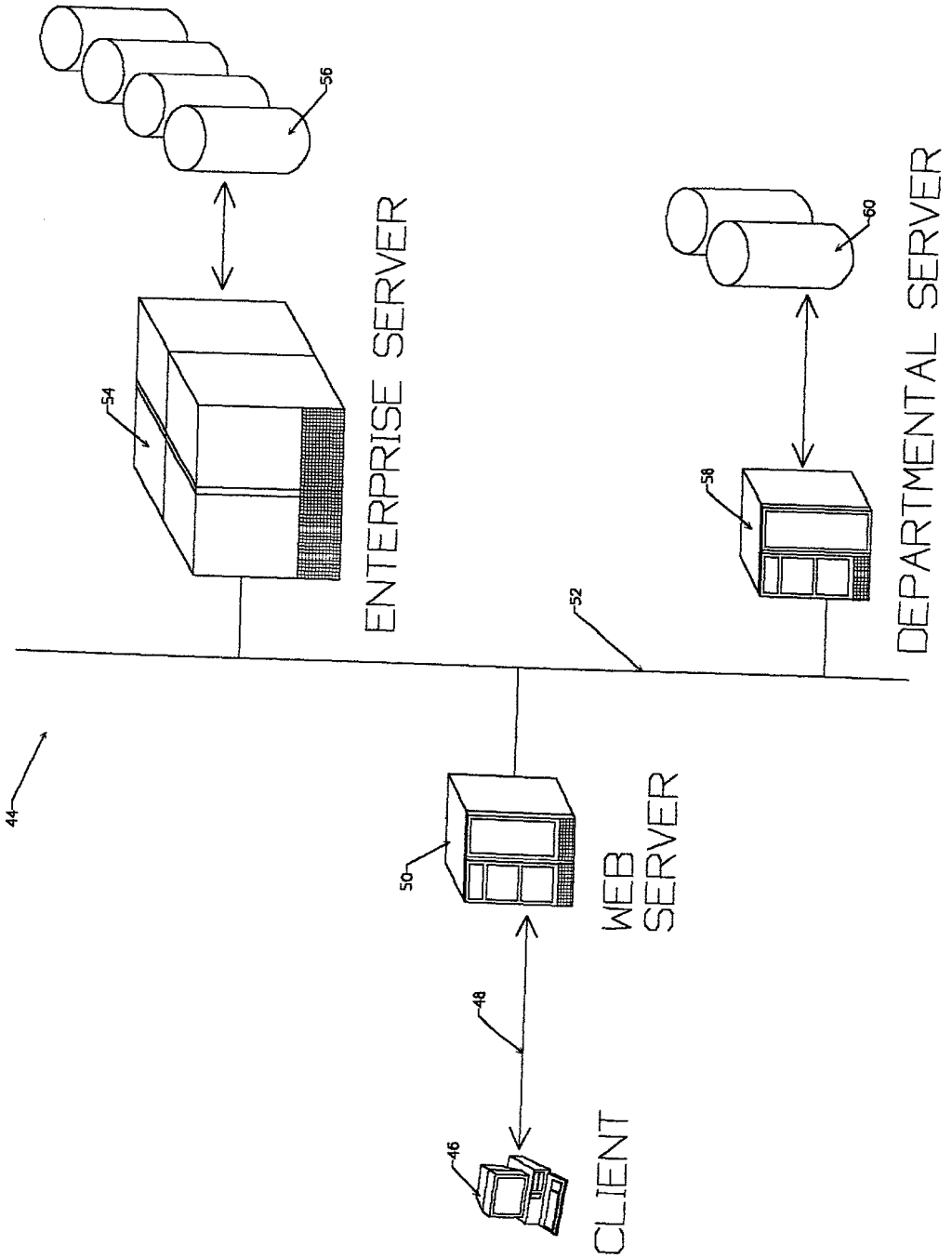

FIG. 3

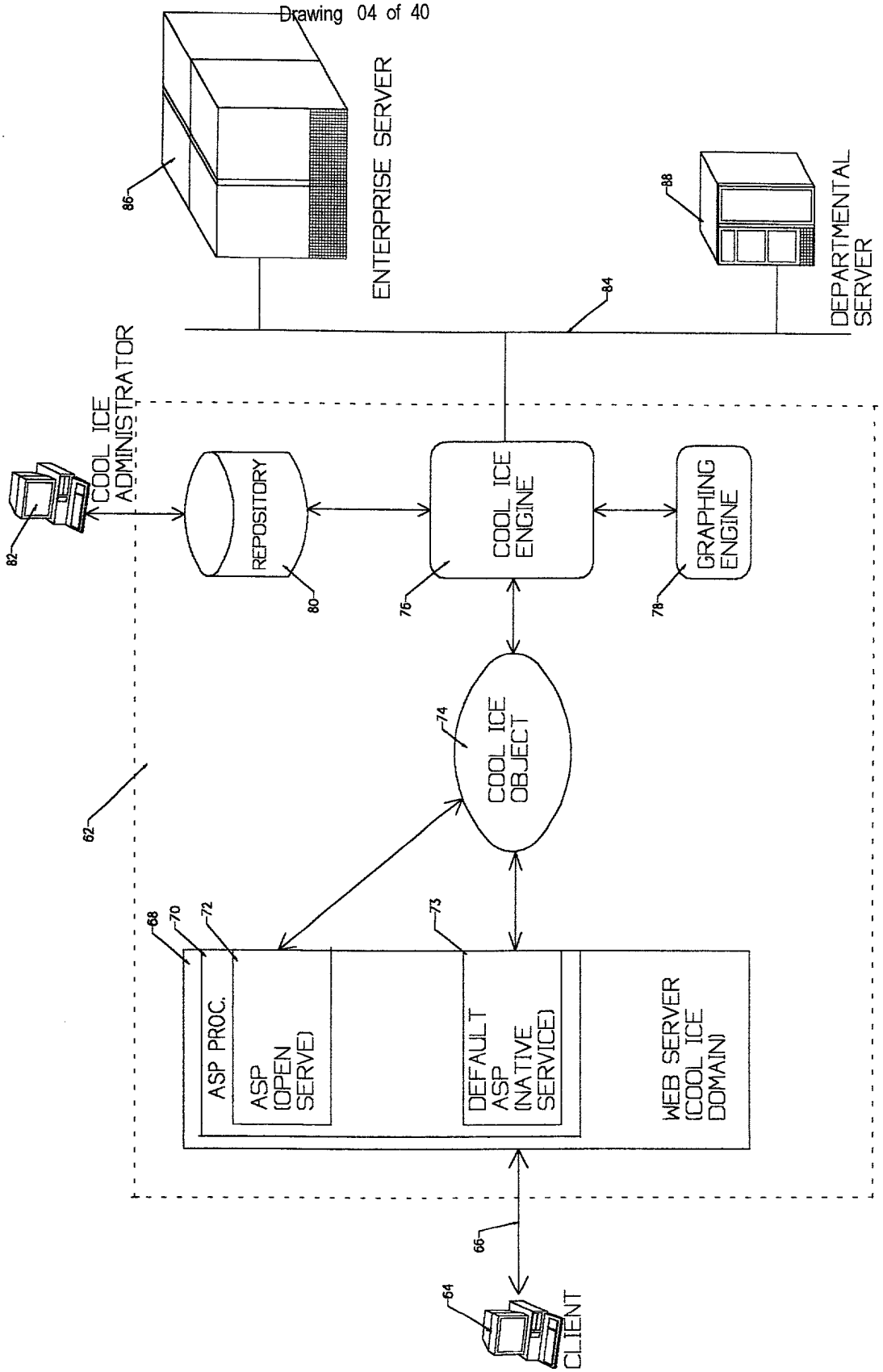
ENTERPRISE SERVER
86
DEPARTMENTAL SERVER
88
84
COOL ICE ADMINISTRATOR
82
REPOSITORY
80
COOL ICE ENGINE
76
GRAPHING ENGINE
78
COOL ICE OBJECT
74
62
68
70
72
73
ASP PROC.
ASP (OPEN SERVE)
DEFAULT ASP (NATIVE SERVICE)
WEB SERVER (COOL ICE DOMAIN)
66
64
CLIENT

FIG. 4

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 05 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

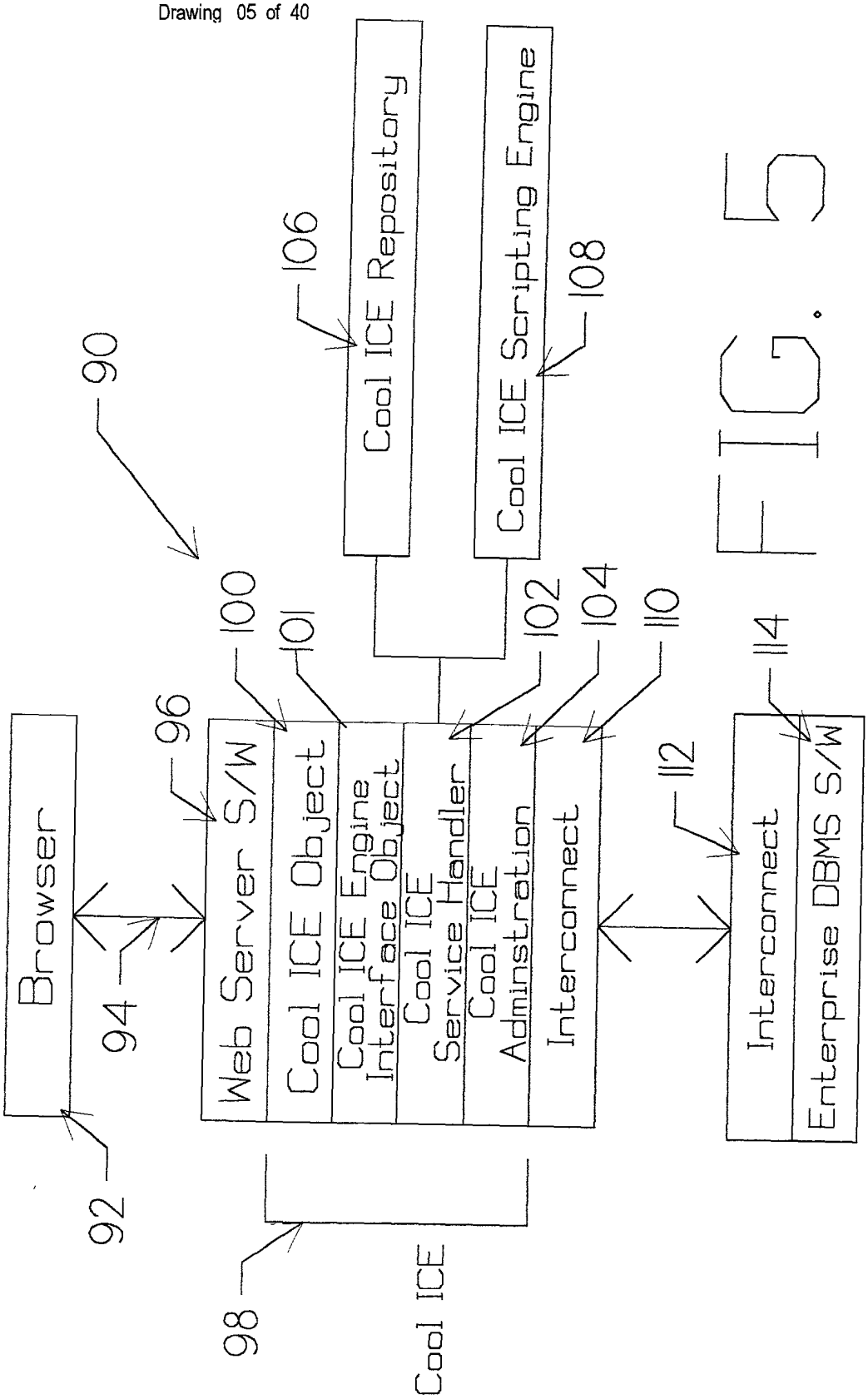

FIG. 5

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 06 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

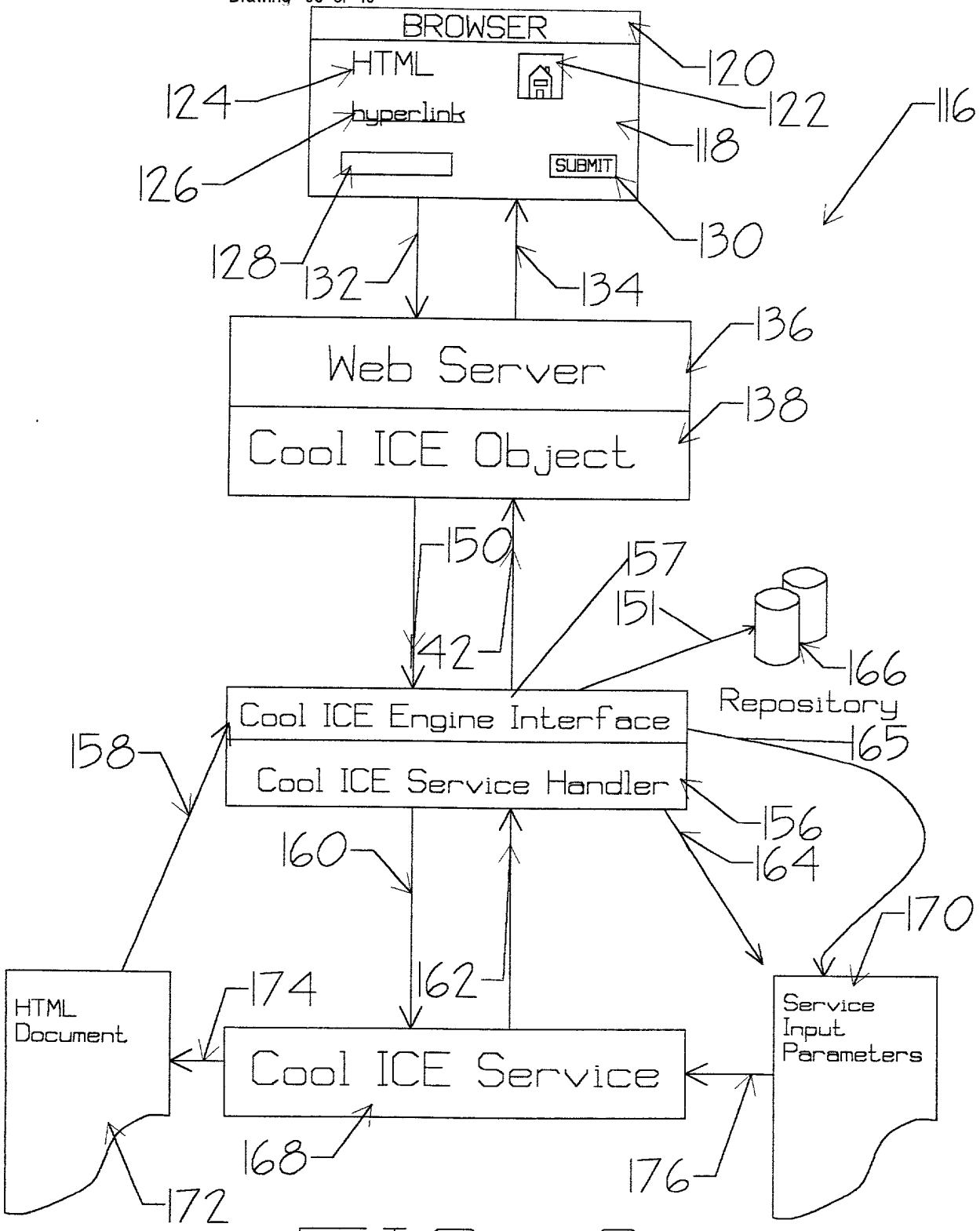

FIG. 6

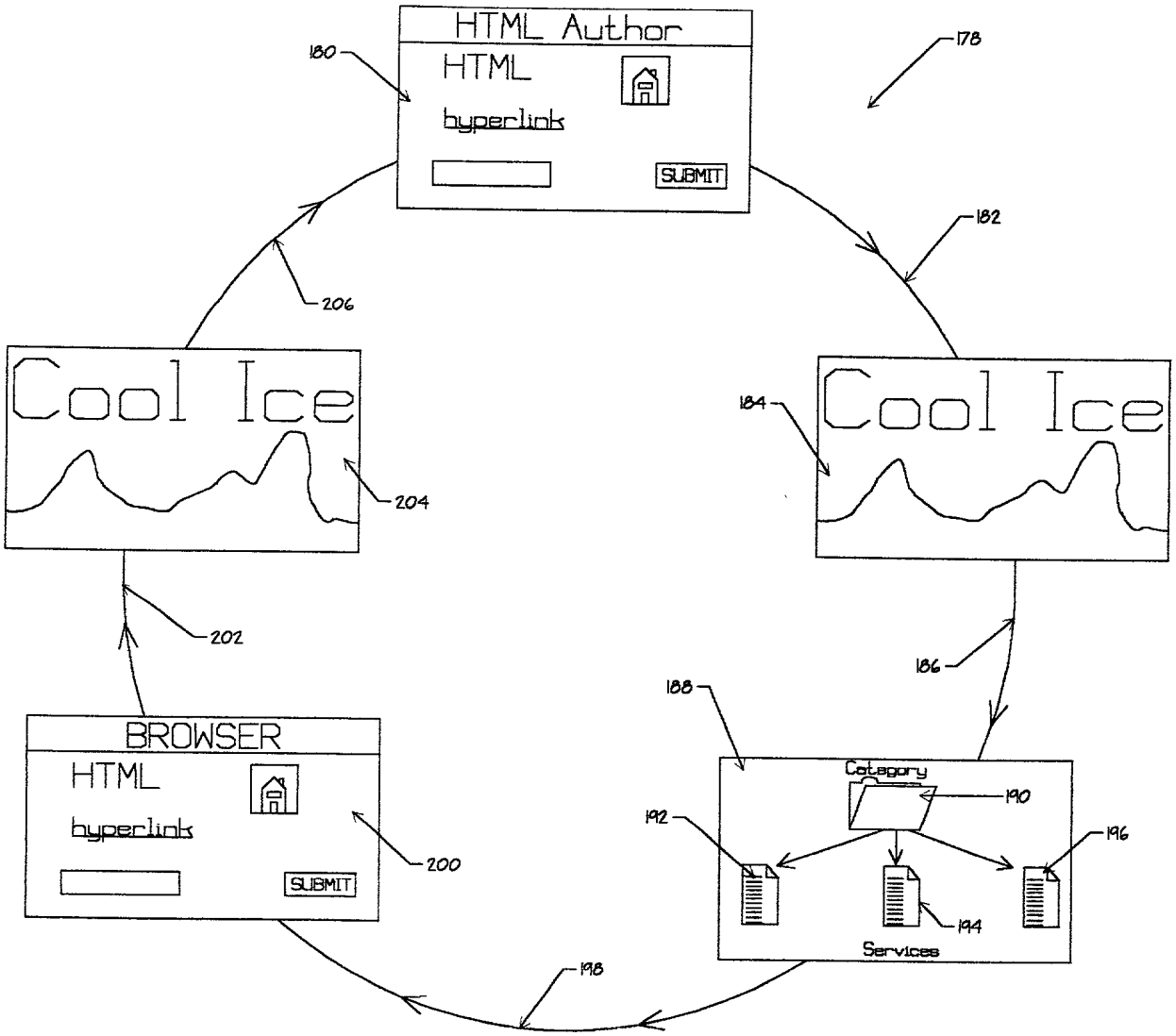
HTML Author
HTML
hyperlink
SUBMIT
180
178
182
206
Cool Ice
204
184
Cool Ice
202
186
188
BROWSER
HTML
hyperlink
SUBMIT
200
Category
190
192
196
194
Services
198

FIG. 7

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 08 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

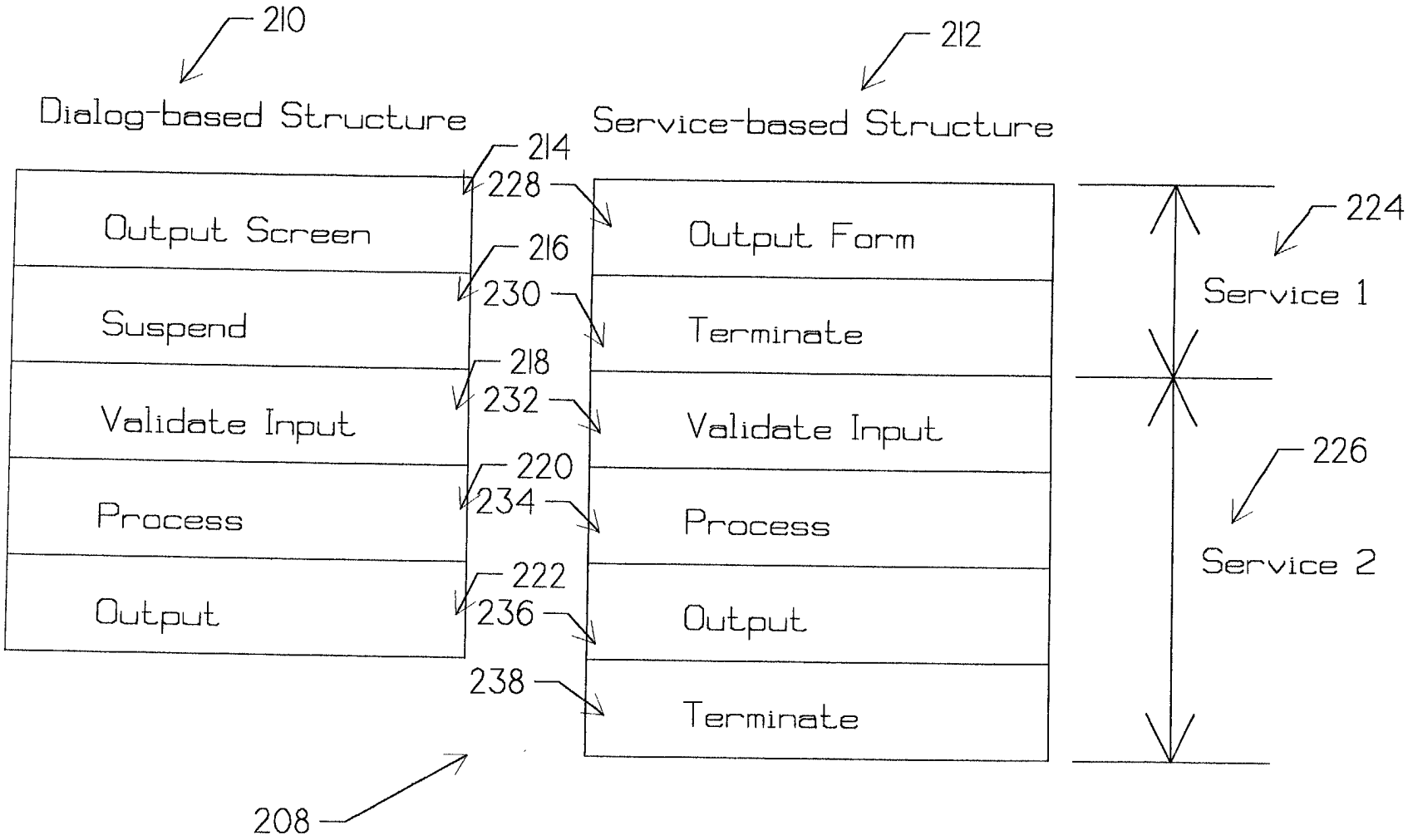

FIG. 8

Express Mail No. ET970414370US
Customer Assignment No. 27516

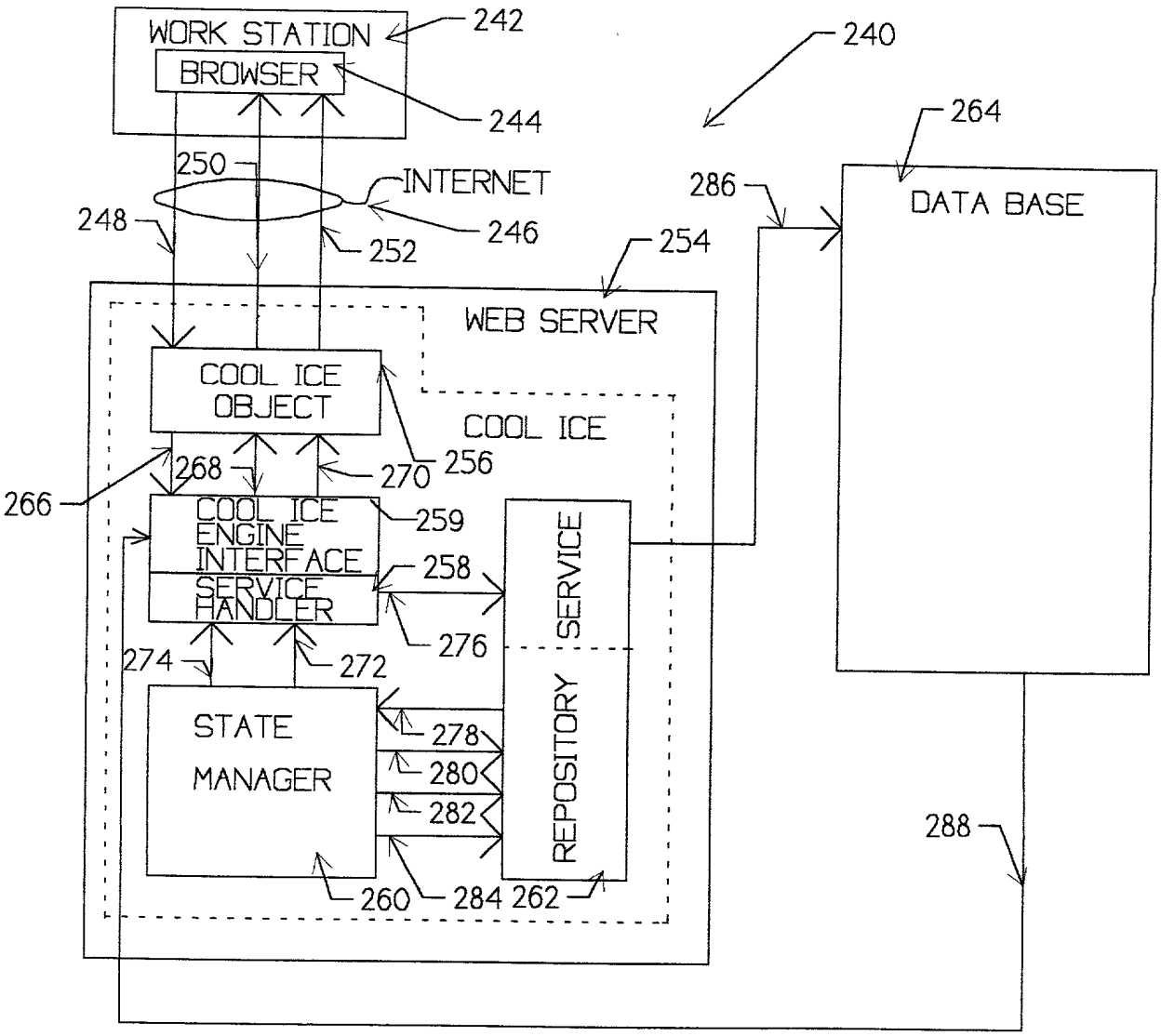

FIG. 9

Express Mail No. ET970414370US
Customer Assignment No. 27516

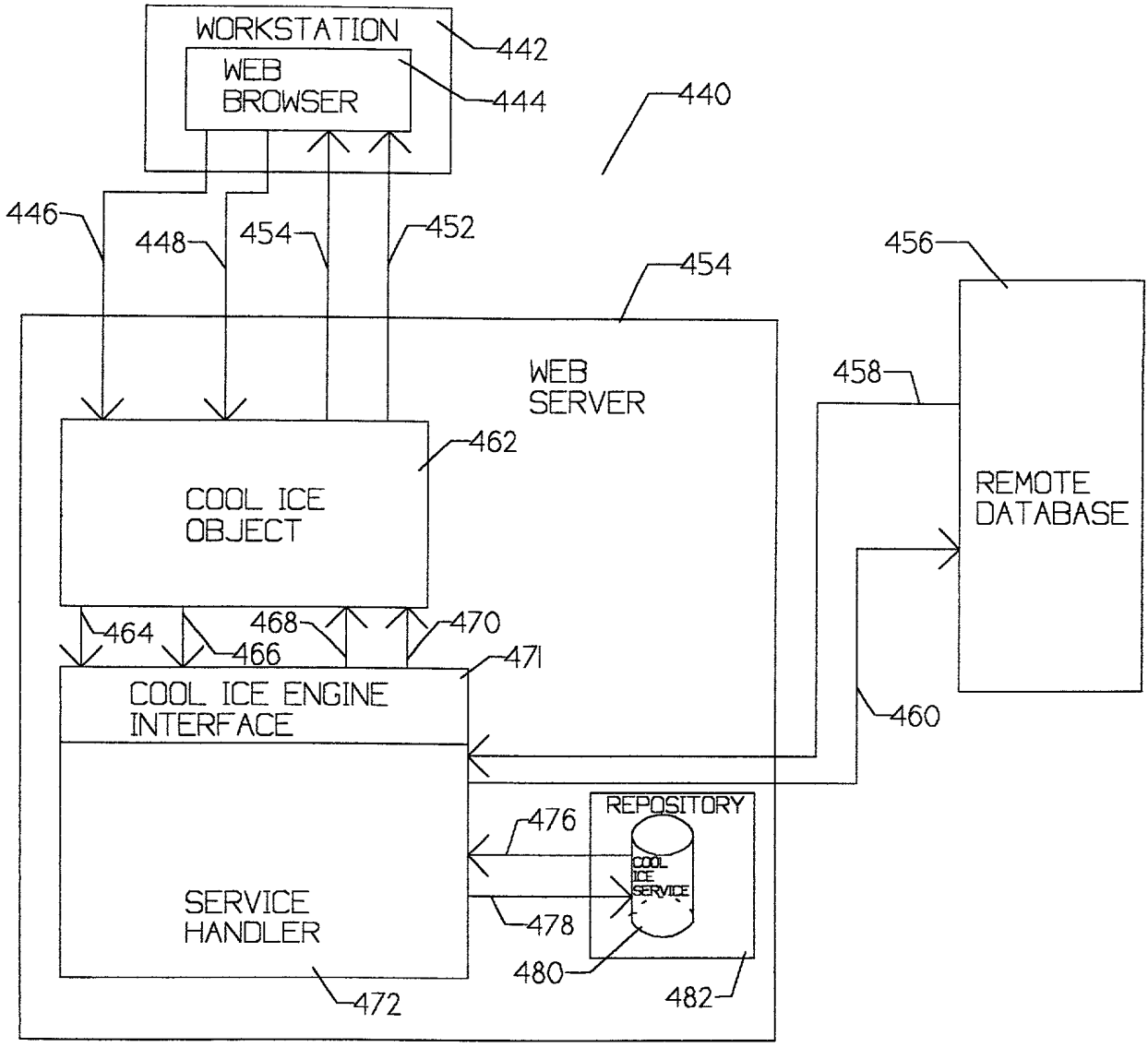

FIG. 10

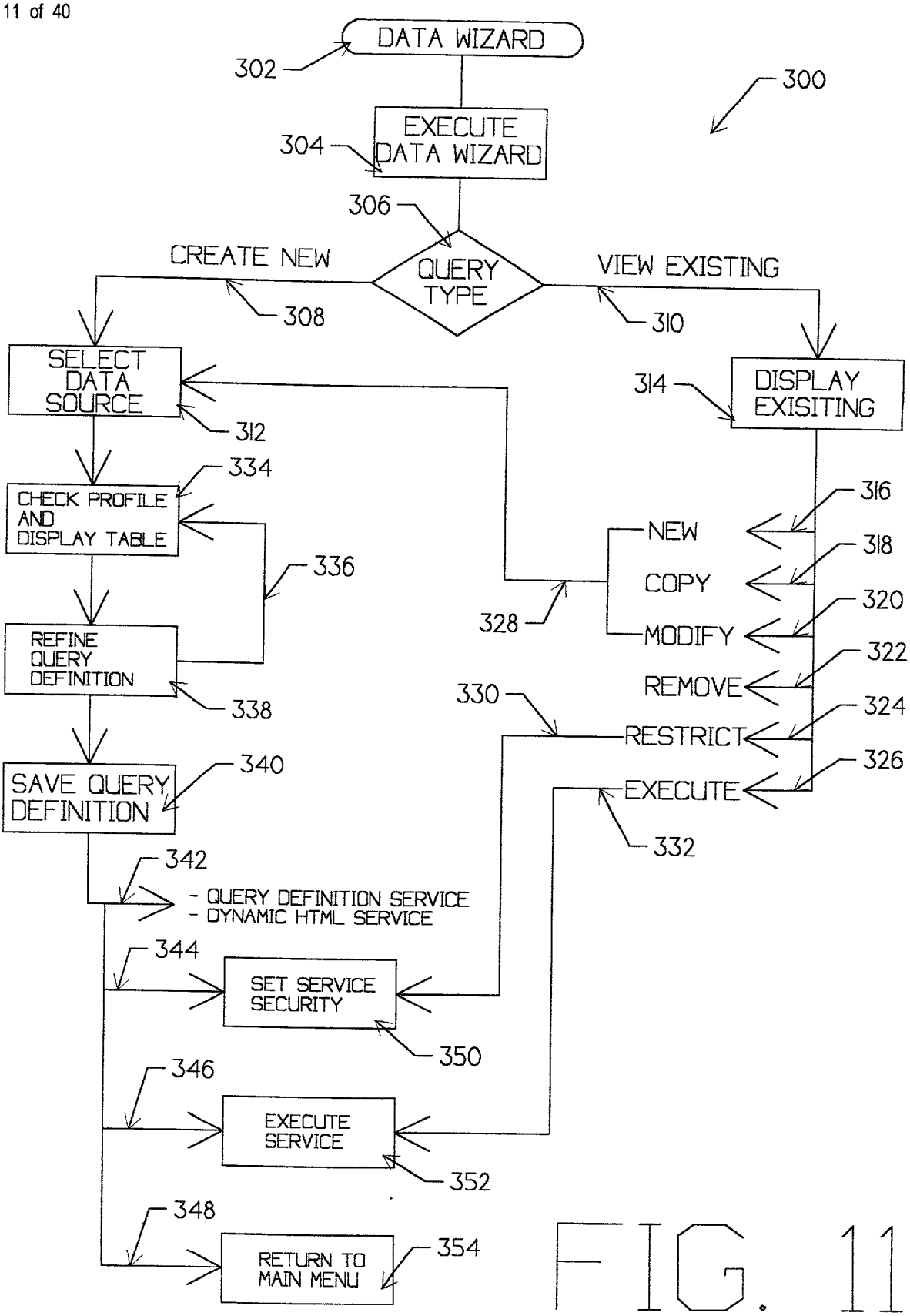
DATA WIZARD
302
300
EXECUTE DATA WIZARD
304
306
QUERY TYPE
CREATE NEW
308
VIEW EXISTING
310
SELECT DATA SOURCE
312
DISPLAY EXISITING
314
CHECK PROFILE AND DISPLAY TABLE
334
316
NEW
318
COPY
320
MODIFY
322
REMOVE
324
RESTRICT
326
EXECUTE
328
336
REFINE QUERY DEFINITION
338
330
SAVE QUERY DEFINITION
340
332
342
- QUERY DEFINITION SERVICE
- DYNAMIC HTML SERVICE
344
SET SERVICE SECURITY
350
346
EXECUTE SERVICE
352
348
RETURN TO MAIN MENU
354

FIG. 11

Express Mail No. ET970414370US
Customer Assignment No. 27516

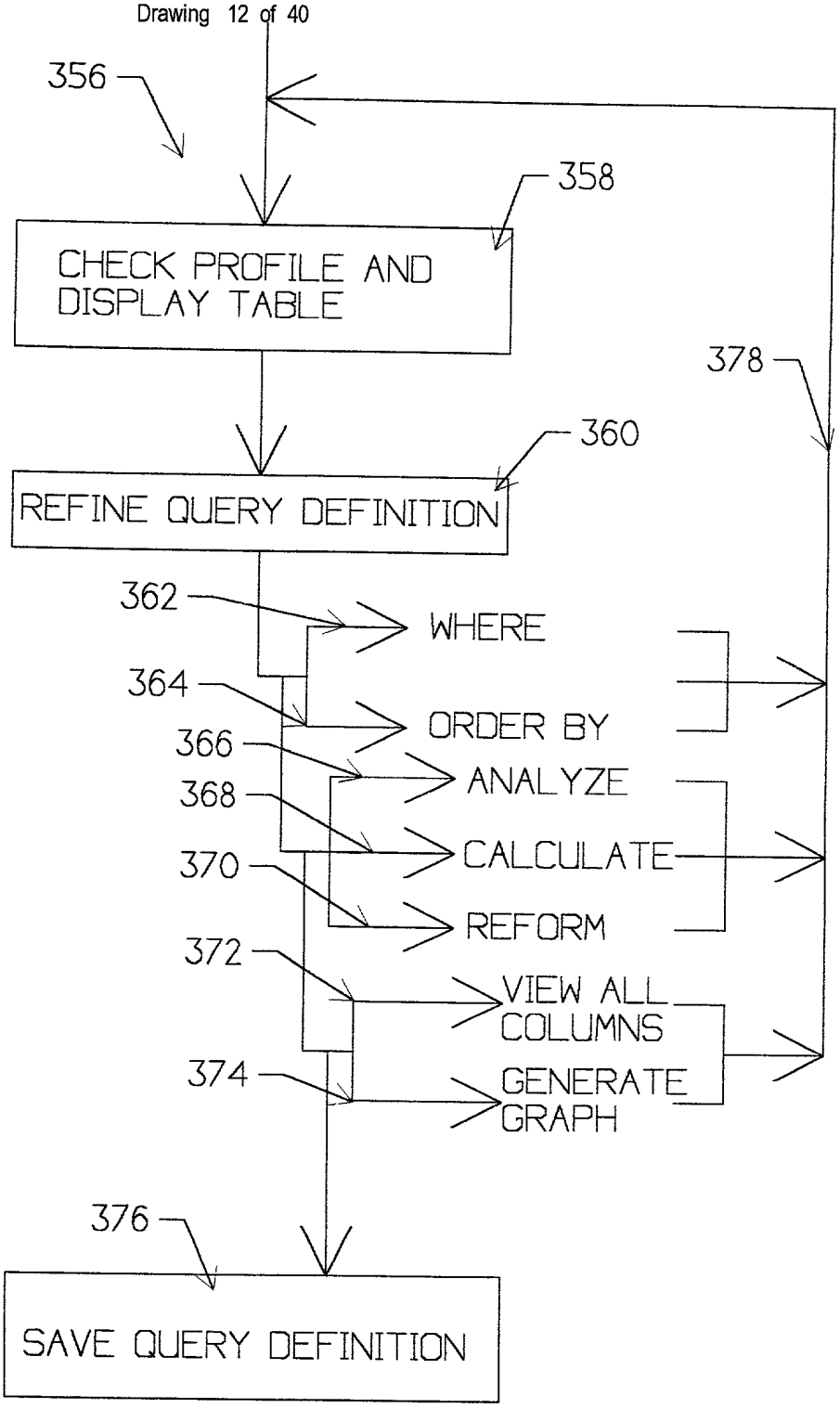

FIG. 12

Patent Application
Filing Date: 12/21/2001
Express Mail No. ET970414370US
Customer Assignment No. 27516
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 13 of 40

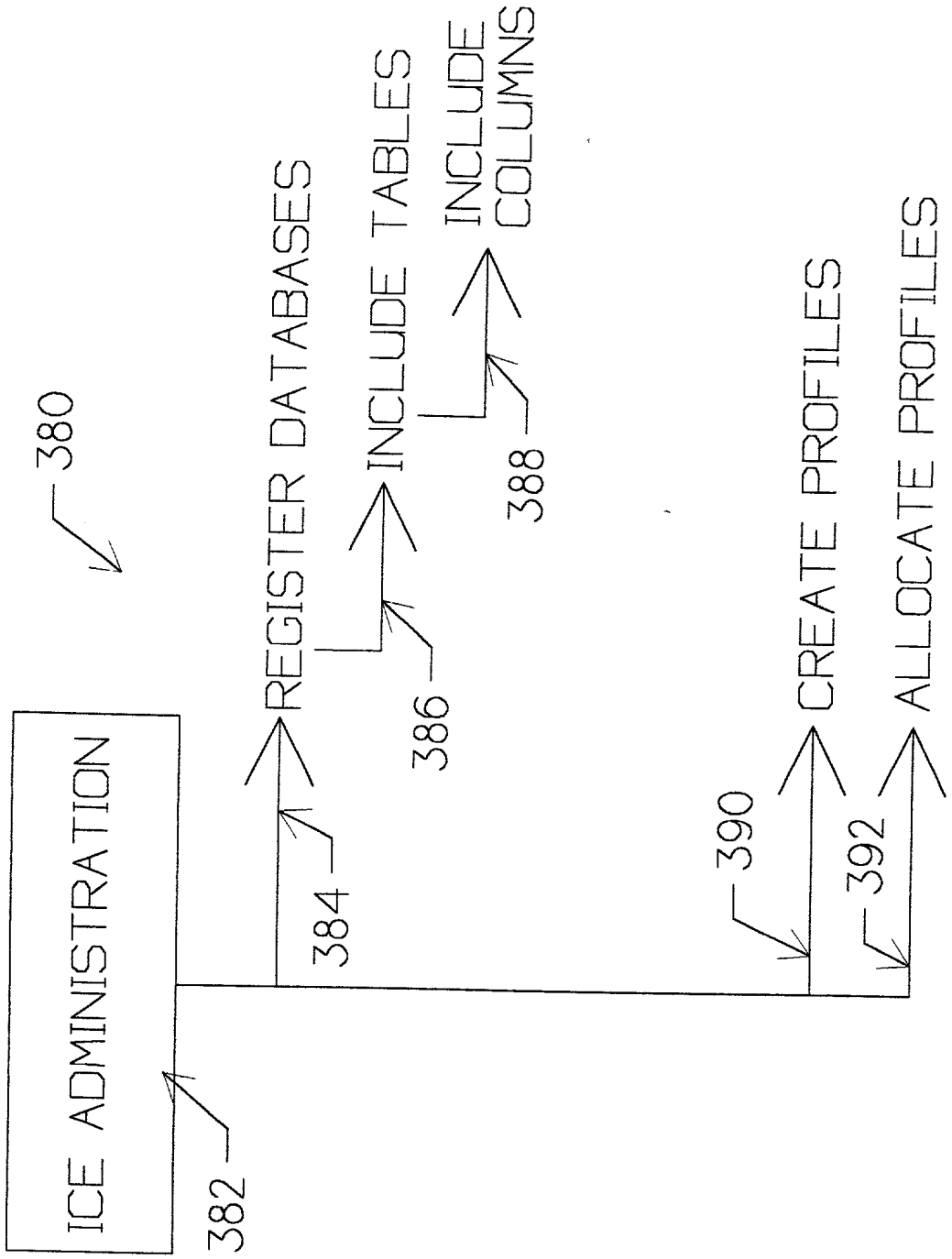

FIG. 13

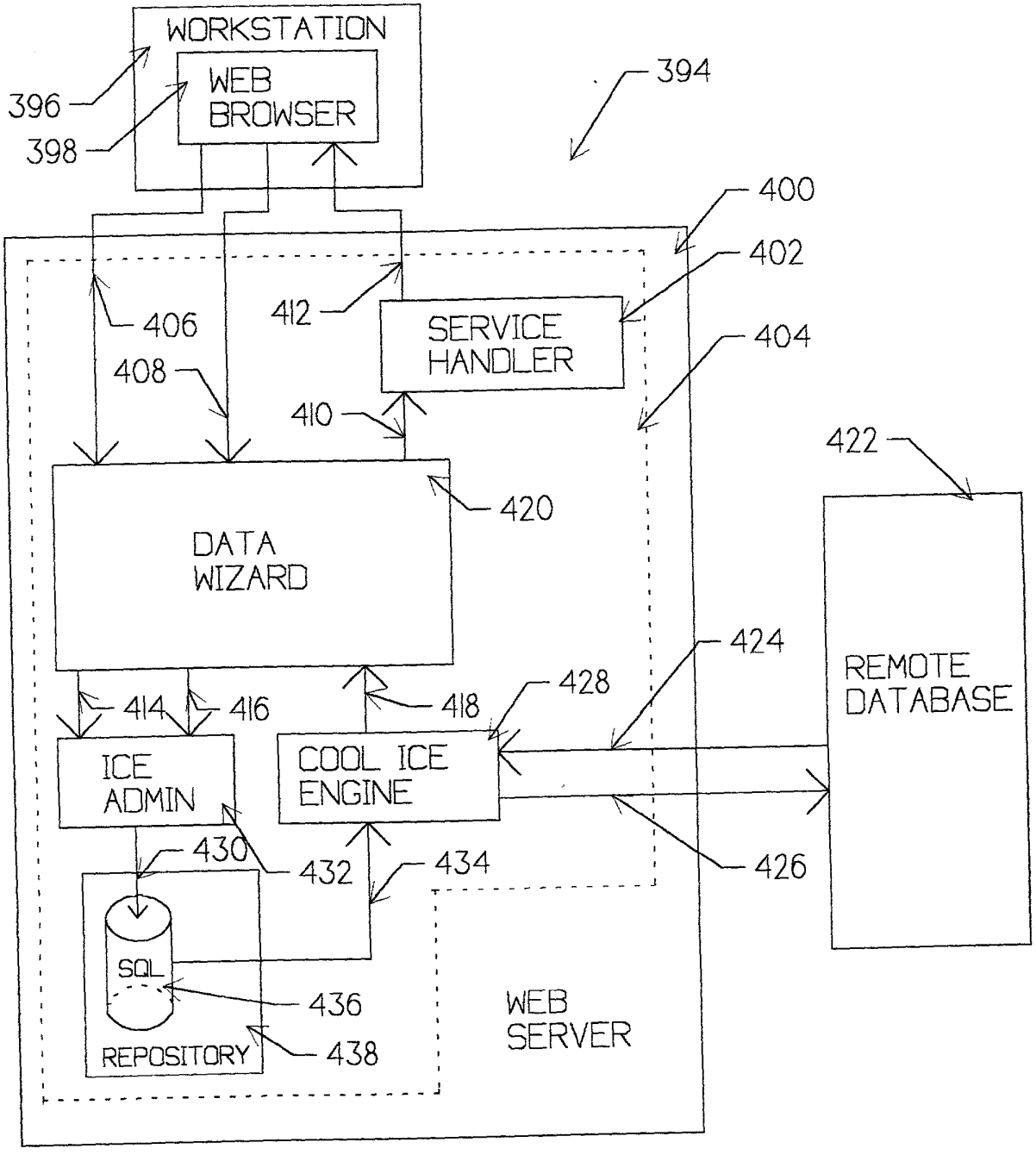
WORKSTATION
WEB BROWSER
396
398
394
400
402
406
412
SERVICE HANDLER
404
408
410
422
DATA WIZARD
420
REMOTE DATABASE
424
414
416
418
428
ICE ADMIN
COOL ICE ENGINE
430
432
434
426
SQL
436
WEB SERVER
REPOSITORY
438

FIG. 14

Express Mail No. ET970414370US
Customer Assignment No. 27516

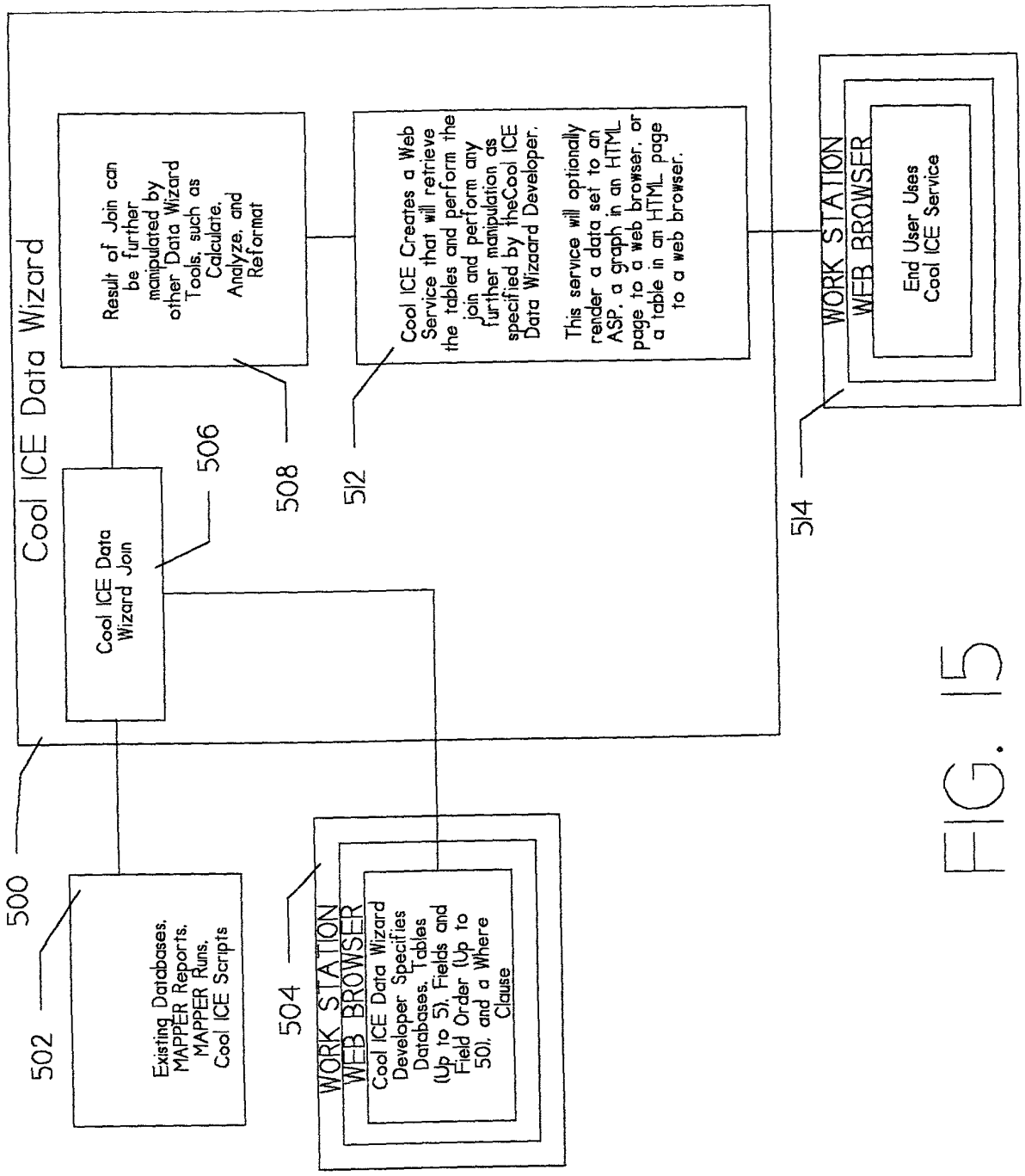

FIG. 15

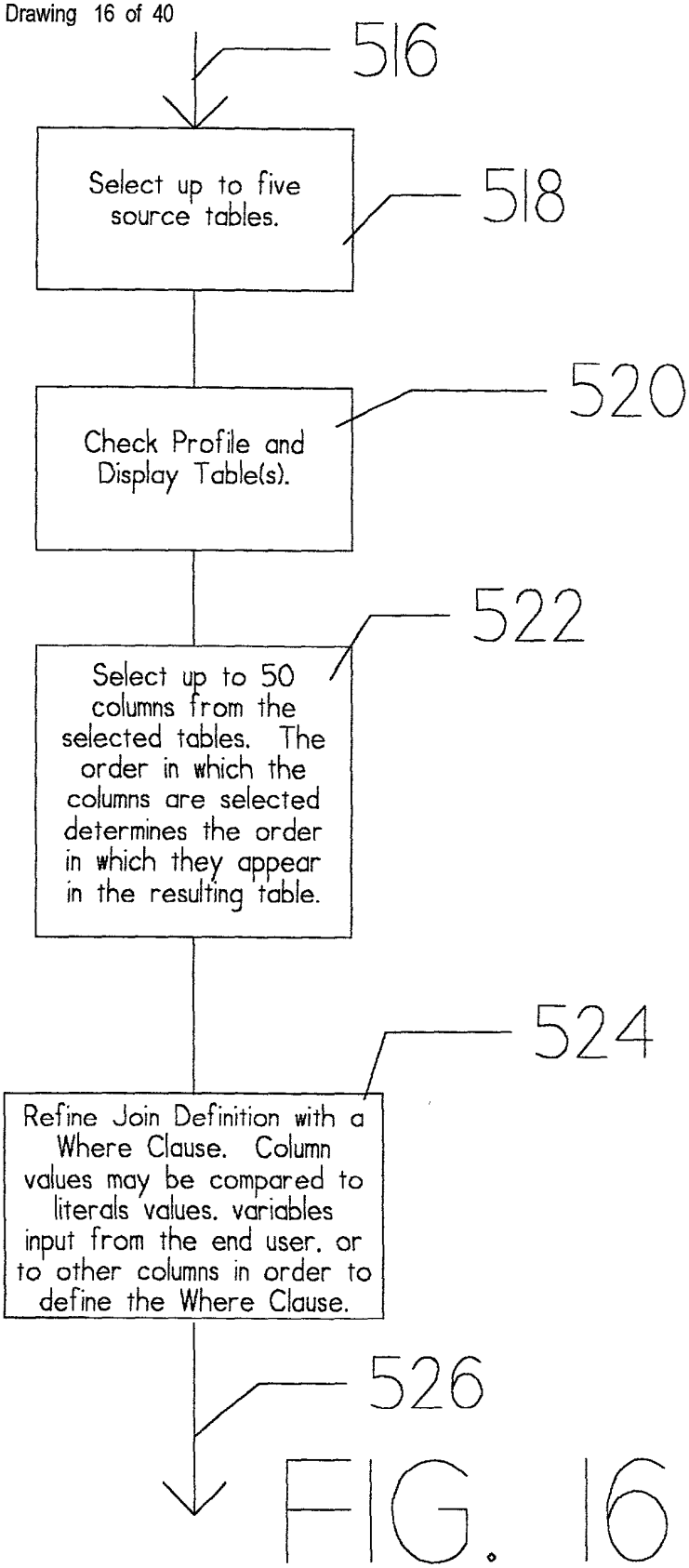
516
Select up to five source tables.
518
Check Profile and Display Table(s).
520
Select up to 50 columns from the selected tables. The order in which the columns are selected determines the order in which they appear in the resulting table.
522
Refine Join Definition with a Where Clause. Column values may be compared to literals values. variables input from the end user. or to other columns in order to define the Where Clause.
524
526

FIG. 16

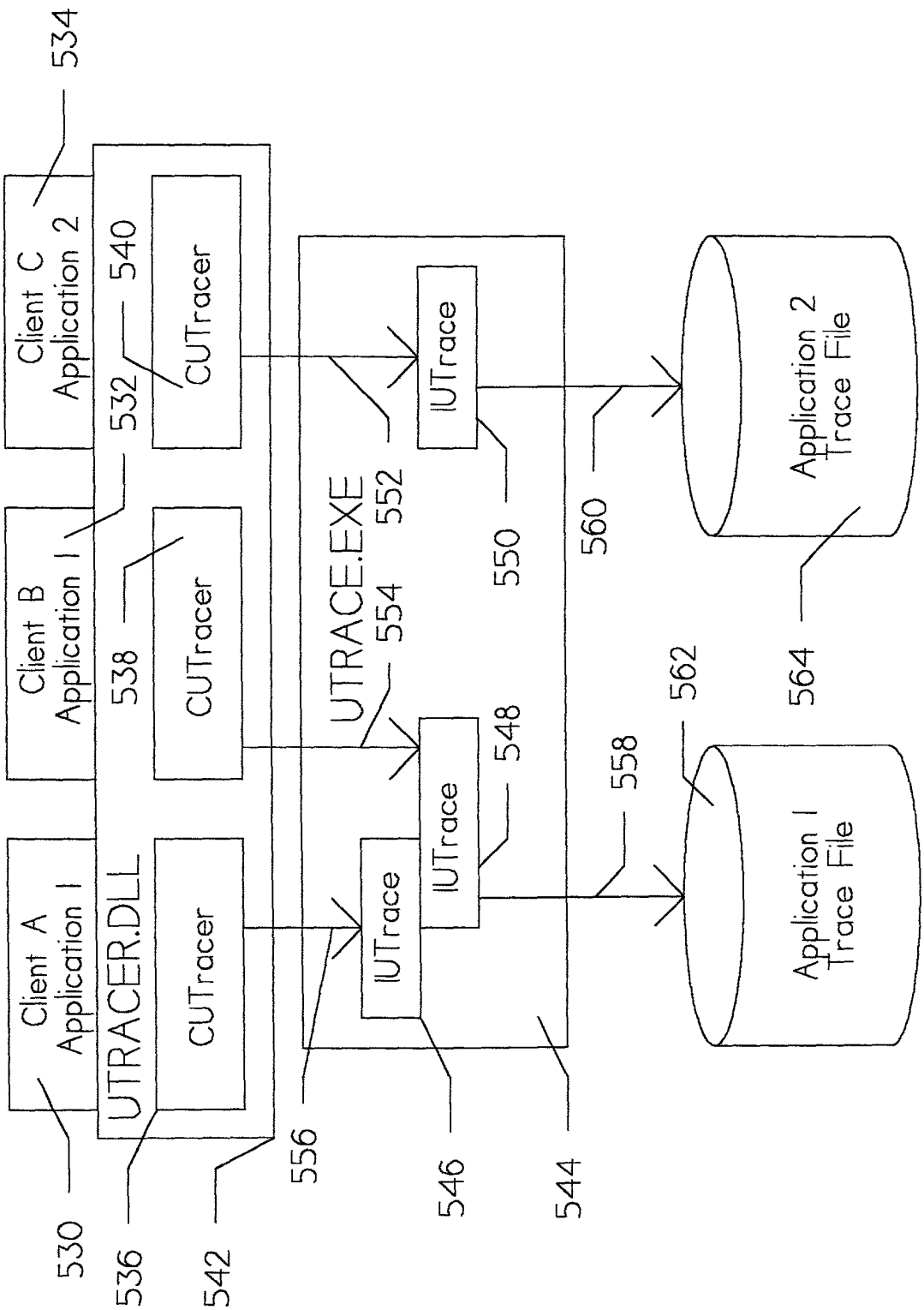
Client A Application 1
Client B Application 1
Client C Application 2
UTRACER.DLL
CUTracer
CUTracer
CUTracer
UTRACE.EXE
IUTrace
IUTrace
IUTrace
Application 1 Trace File
Application 2 Trace File
530
532
534
536
538
540
542
544
546
548
550
552
554
556
558
560
562
564

FIG. 17

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 18 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

HKLM\SOFTWARE\UNISYS\UTRACE

APPNAME -- Subkey matching the name of the application 565

- ENABLETRACE -- DWORD value indication a Boolean (1=trace,, 0=no trace).
- MAXENTRIES -- DWORD value indicating the maximum number of entries in the trace file. If missing, then no upper limit is imposed.
- FORMATFLAGS -- DWORD value indicating message formatting flags.
- POLICYFLAGS -- DWORD value indicating trace policy flags set for the application.
- TRACELEVEL -- DWORD value indicating a trace level. 0 = no trace.
- TRACEPATH -- String value indicating the directory path for the trace files.
- REGTRACE -- A string value containing the HKLM\Software sub key to trace for this application. Blank or missing for no registry trace.
- COMPONENT -- A subkey for a specific component of the application.
  - POLICYFLAGS -- Value indicating component level trace policy flags
  - TRACELEVEL -- DWORD Value indicating a trace level. 0 = no trace.
  - VERSIONTRACE-- String value specifying executable component name for version information tracing.

FIG. 18

Express Mail No. ET970414370US
Customer Assignment No. 27516

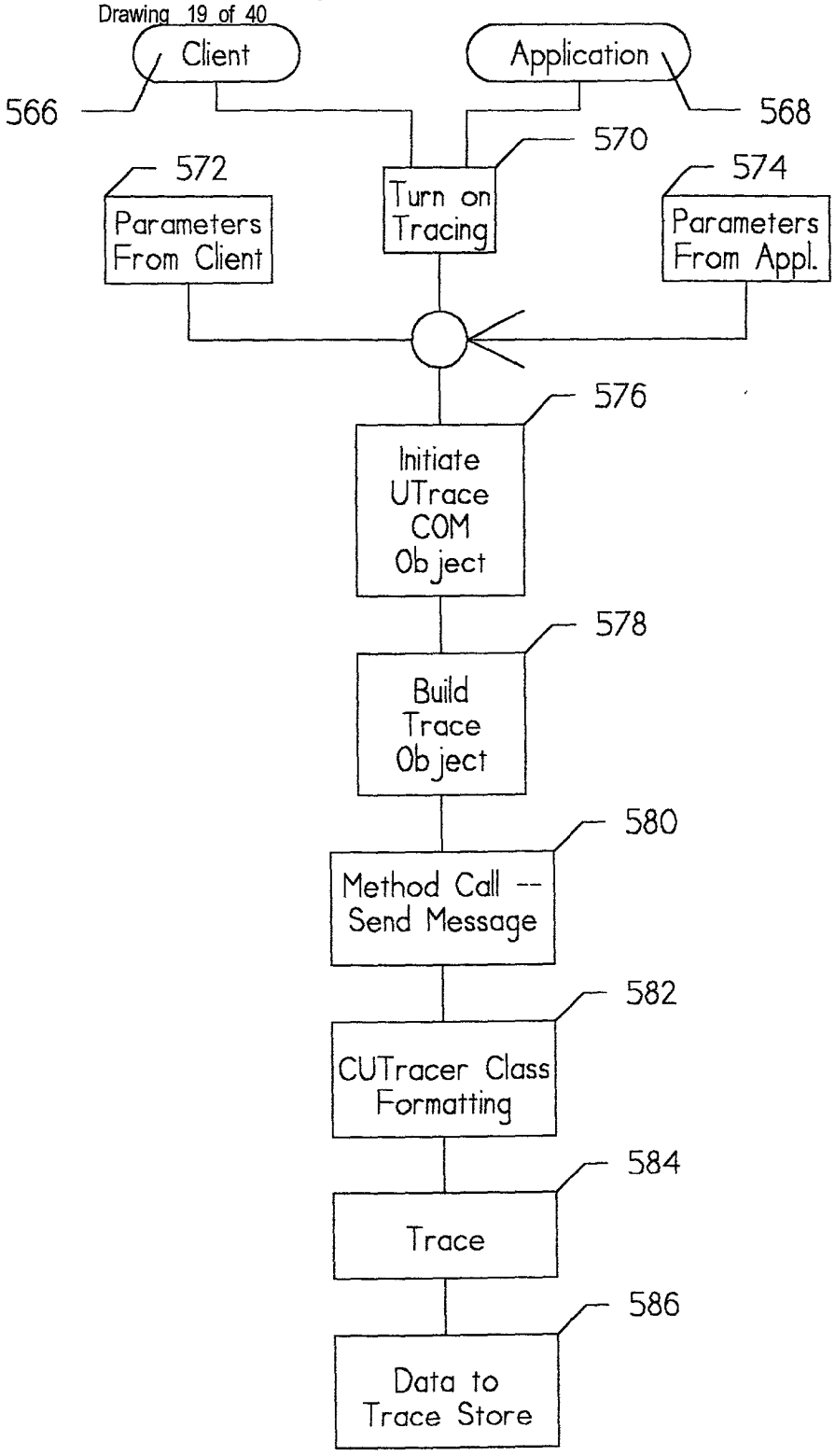

FIG. 19

```
#define CI_TRACE_VERSION        0x1
#define CI_TRACE_ERROR          0x2
#define CI_TRACE_INTERFACE      0x4
#define CI_TRACE_FLOW           0x8
#define CI_TRACE_DETAIL         0x10
```

FIG. 20A

```
if (m_trace. Active(C)_TRACE_DETAIL))
m_trace<<"MY Detailed Trace information"<<Localvariable<<traceit
```

FIG. 20B

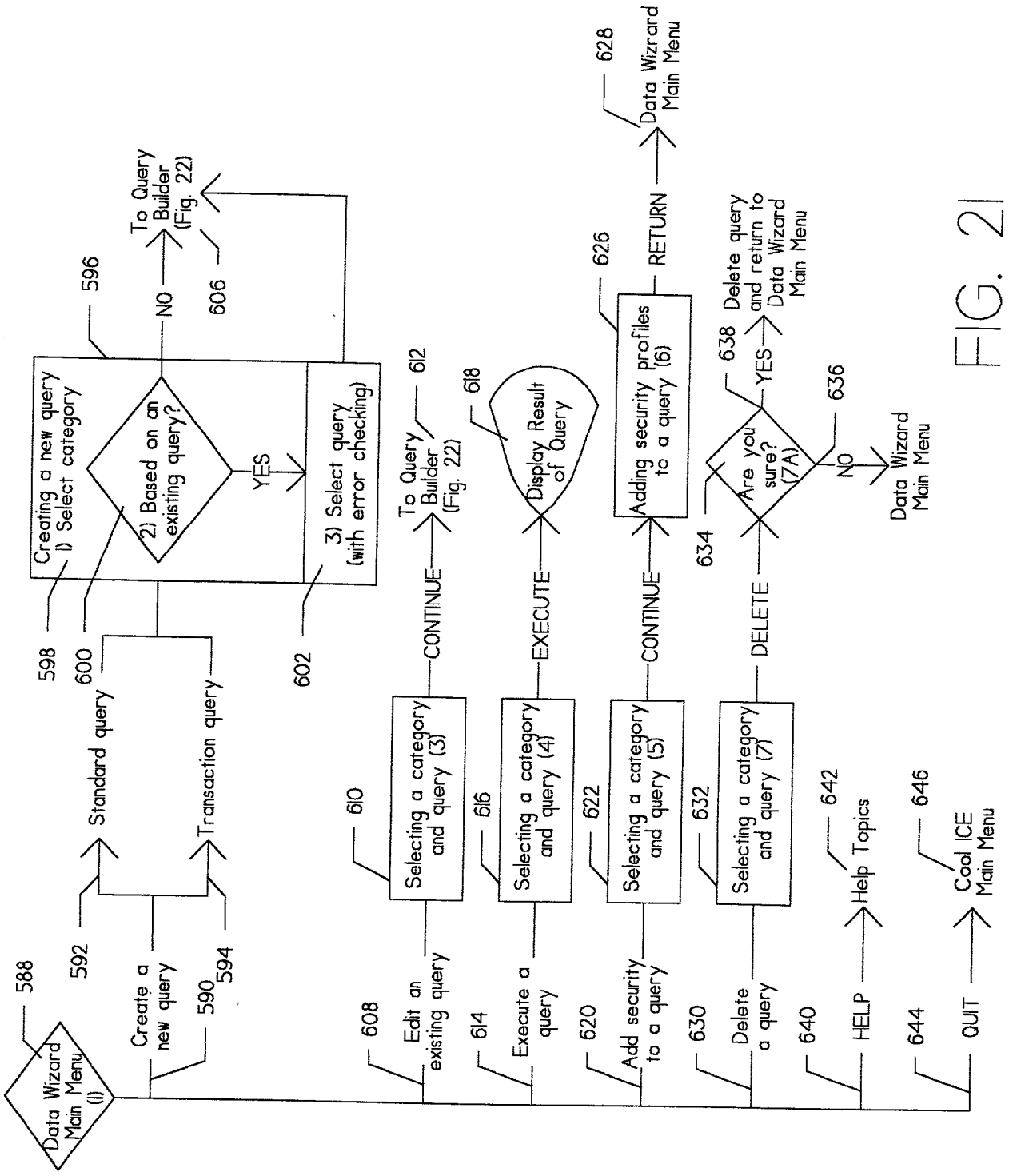
588
Data Wizard Main Menu (1)
592
Create a new query
590
594
Standard query
Transaction query
596
Creating a new query 1) Select category
2) Based on an existing query?
YES
NO
To Query Builder (Fig. 22)
606
598
600
602
3) Select query (with error checking)
608
Edit an existing query
610
Selecting a category and query (3)
CONTINUE
To Query Builder (Fig. 22)
612
614
Execute a query
616
Selecting a category and query (4)
EXECUTE
618
Display Result of Query
620
Add security to a query
622
Selecting a category and query (5)
CONTINUE
626
Adding security profiles to a query (6)
RETURN
628
Data Wizard Main Menu
630
Delete a query
632
Selecting a category and query (7)
DELETE
634
Are you sure? (7A)
YES
638
Delete query and return to Data Wizard Main Menu
NO
636
Data Wizard Main Menu
640
HELP
642
Help Topics
644
QUIT
646
Cool ICE Main Menu

FIG. 21

Express Mail No. ET970414370US
Customer Assignment No. 27516

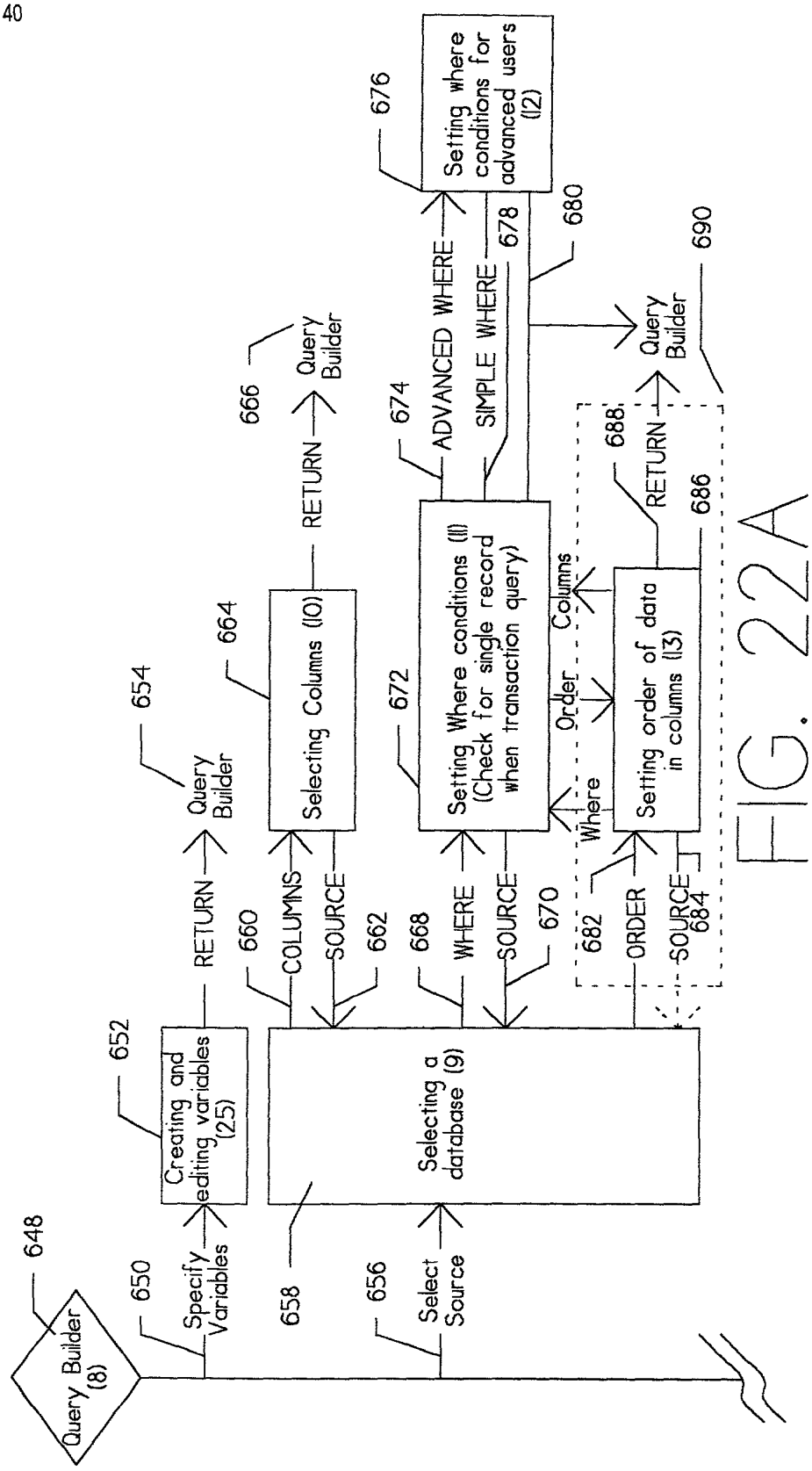

FIG. 22A

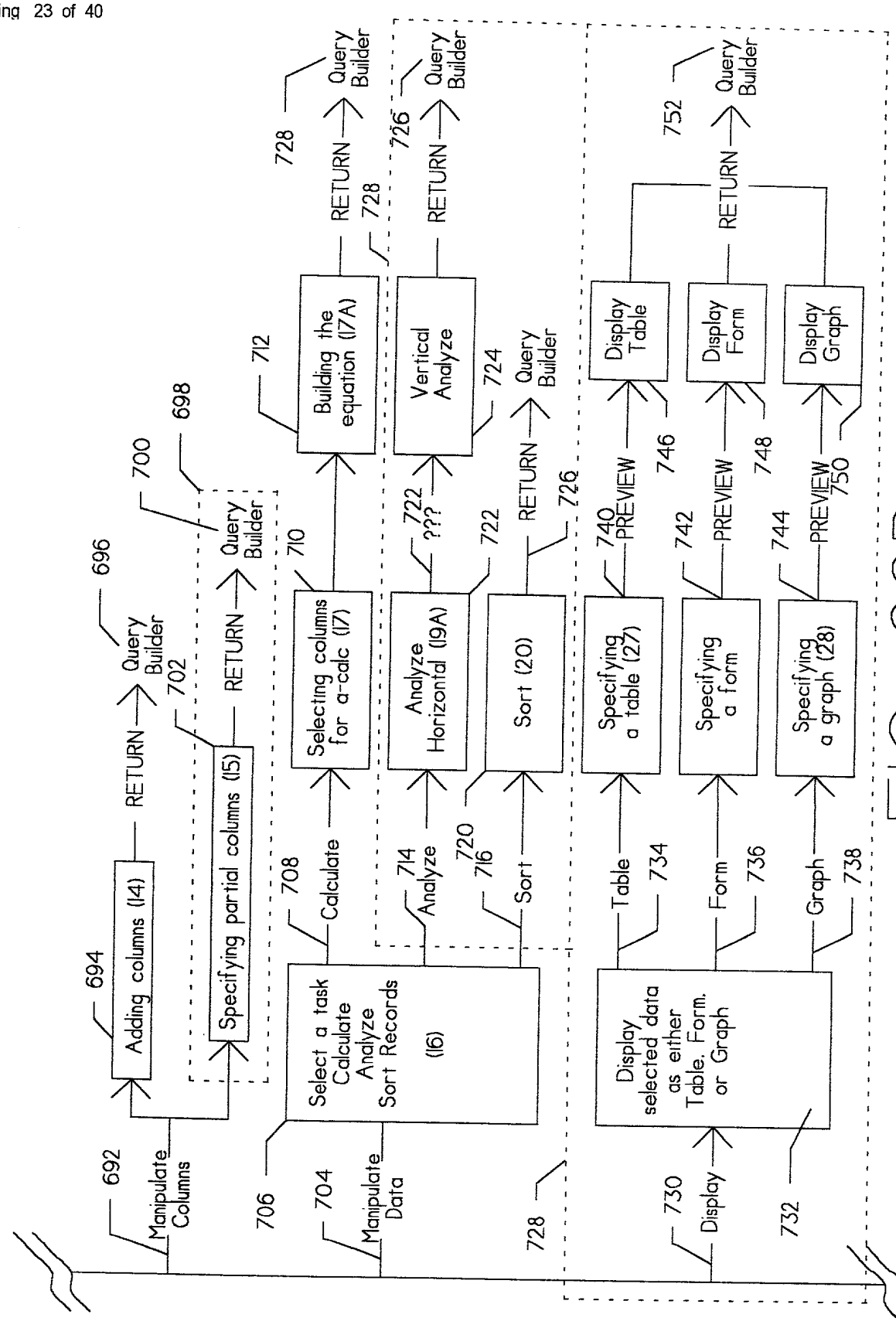
692
Manipulate Columns
694
Adding columns (14)
RETURN
696
Query Builder
698
700
Query Builder
702
Specifying partial columns (15)
RETURN
704
Manipulate Data
706
Select a task
Calculate
Analyze
Sort Records
(16)
708
Calculate
710
Selecting columns for a-calc (17)
712
Building the equation (17A)
RETURN
728
Query Builder
714
Analyze
720
716
Sort
722
Analyze Horizontal (19A)
722
???
724
Vertical Analyze
RETURN
726
Query Builder
722
Sort (20)
RETURN
726
Query Builder
728
730
Display
Display selected data as either Table, Form, or Graph
732
Table
734
Form
736
Graph
738
740
PREVIEW
Specifying a table (27)
742
PREVIEW
Specifying a form
744
PREVIEW
Specifying a graph (28)
746
Display Table
748
Display Form
750
Display Graph
RETURN
752
Query Builder

FIG. 22B

Express Mail No. ET970414370US
Customer Assignment No. 27516

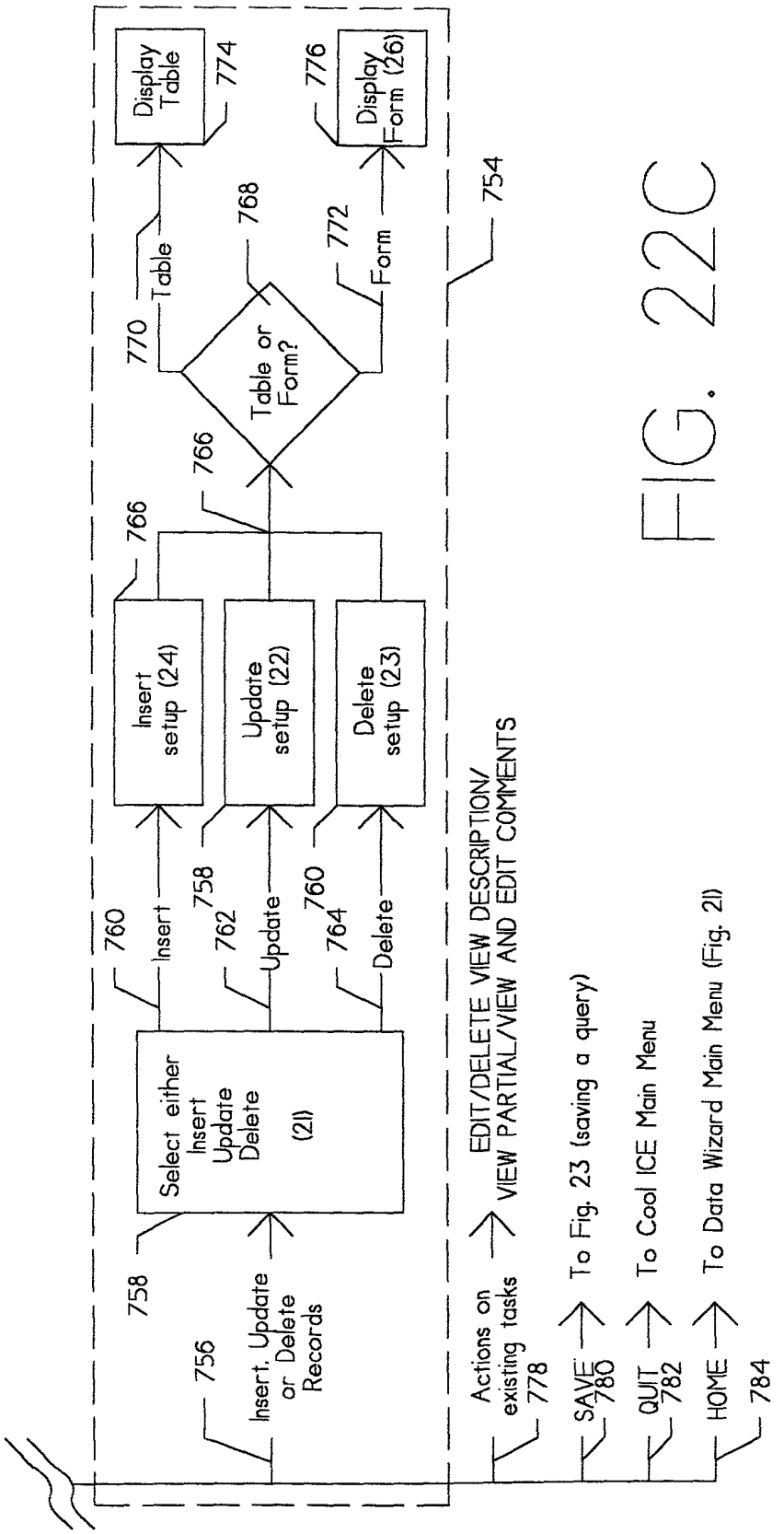

FIG. 22C

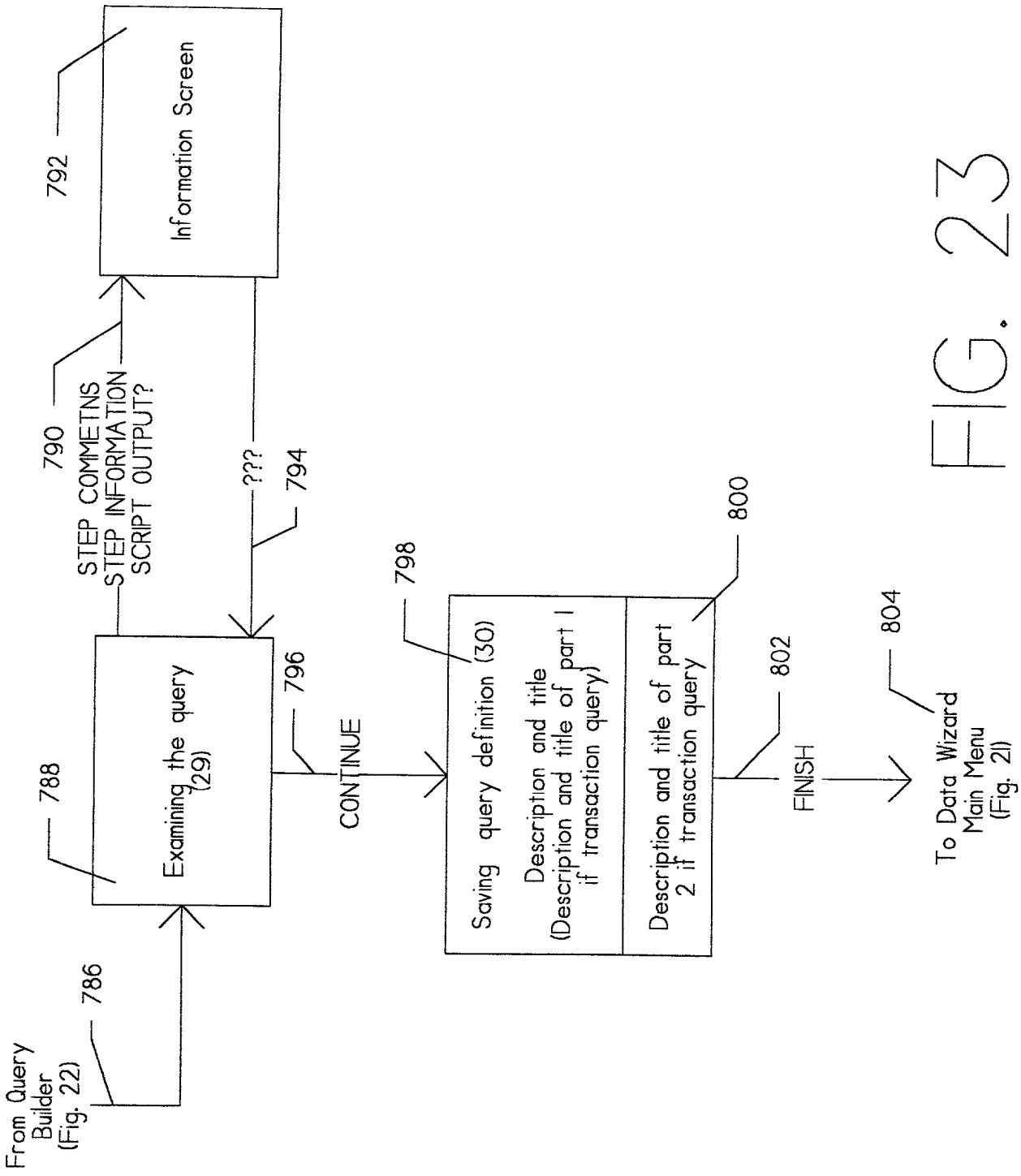
From Query Builder (Fig. 22)
786
788
Examining the query (29)
796
CONTINUE
798
Saving query definition (30)
Description and title (Description and title of part 1 if transaction query)
Description and title of part 2 if transaction query
800
802
FINISH
804
To Data Wizard Main Menu (Fig. 21)
790
STEP COMMETNS
STEP INFORMATION
SCRIPT OUTPUT?
792
Information Screen
???
794

FIG. 23

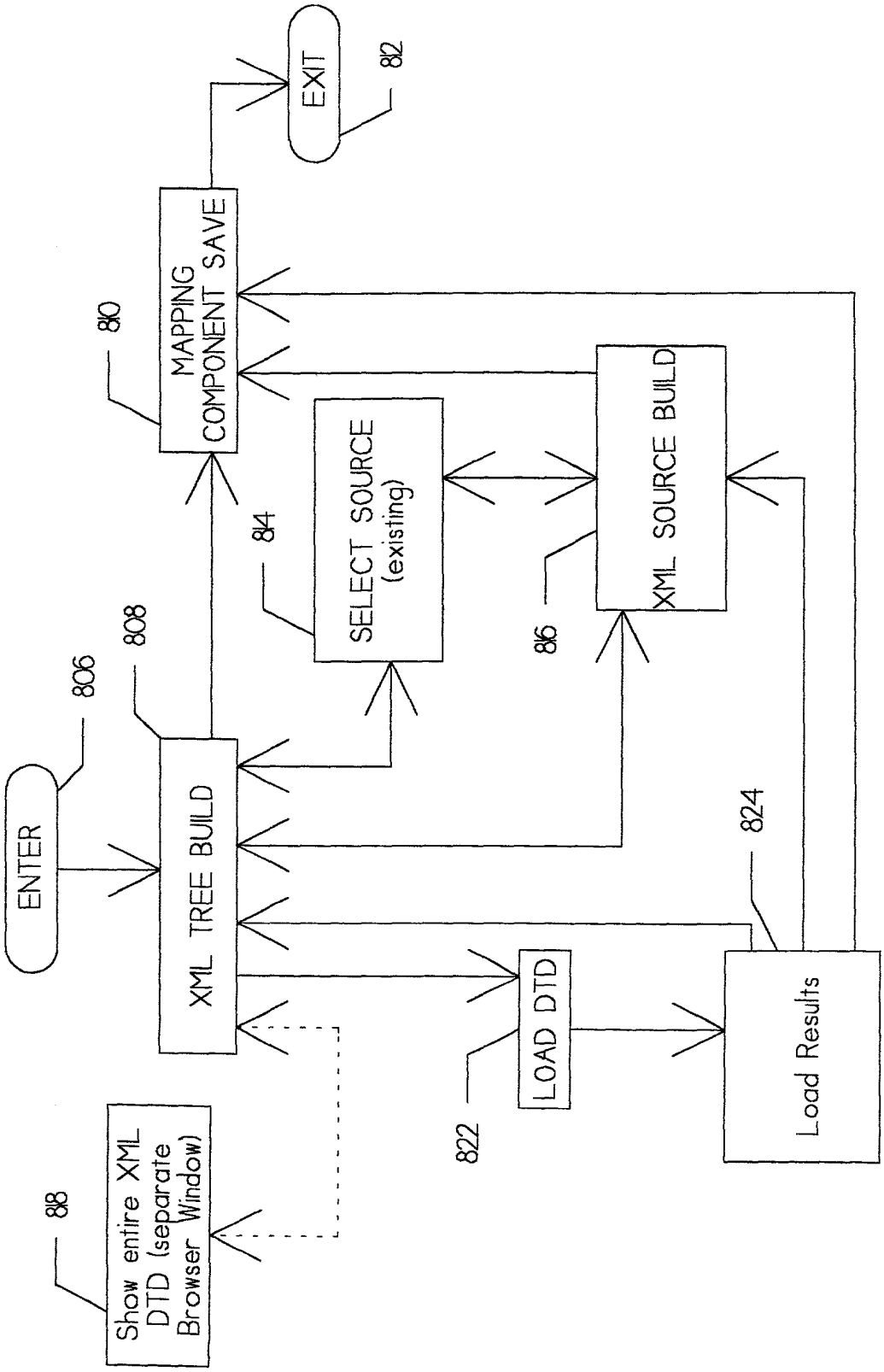
ENTER
806
XML TREE BUILD
808
MAPPING COMPONENT SAVE
810
EXIT
812
SELECT SOURCE (existing)
814
XML SOURCE BUILD
816
LOAD DTD
822
Load Results
824
Show entire XML DTD (separate Browser Window)
818

FIG. 24

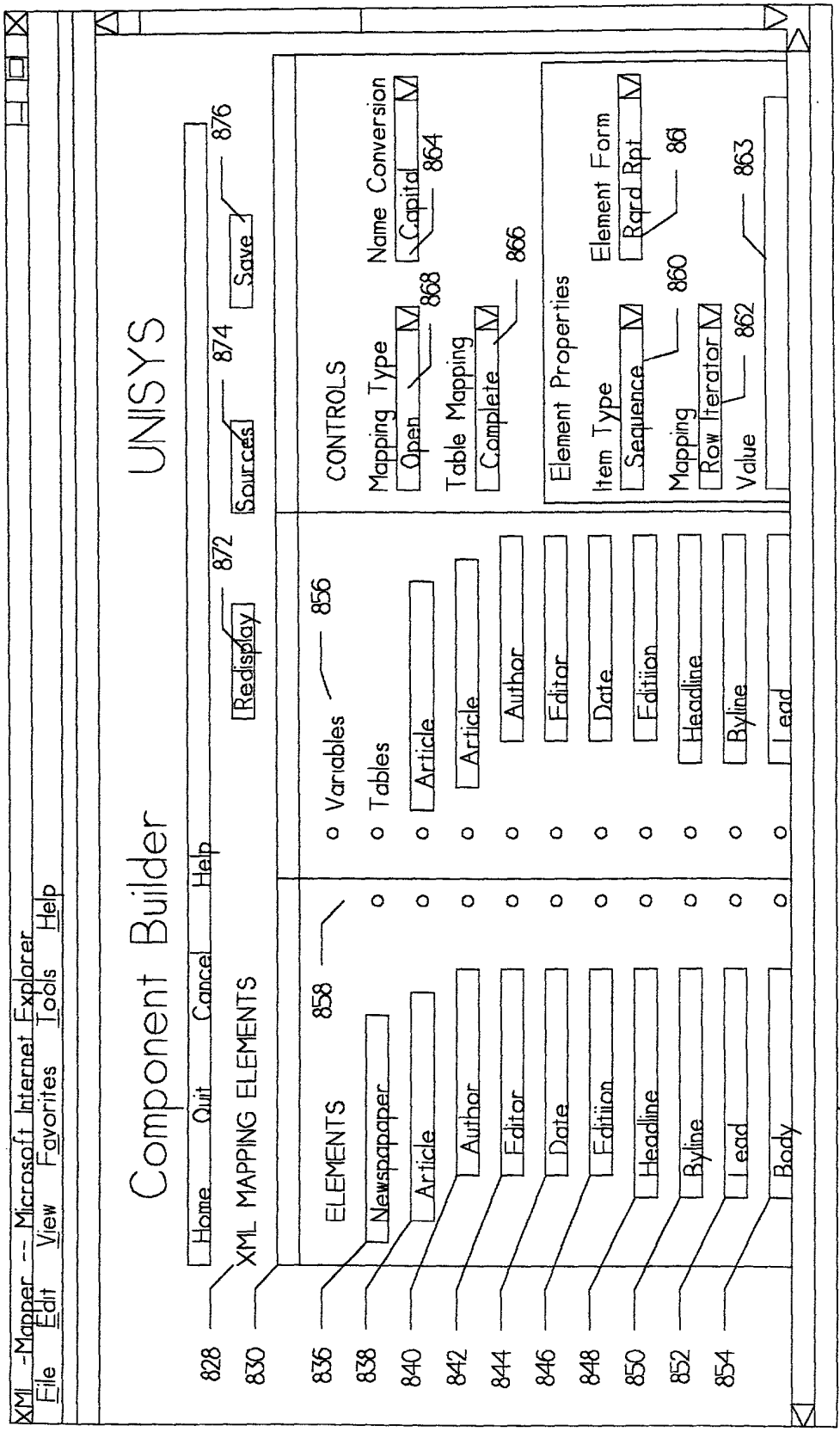
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
Redisplay
Sources
Save
XML MAPPING ELEMENTS
ELEMENTS
Variables
Tables
Newspapaper
Article
Author
Editor
Date
Edition
Headline
Byline
Lead
Body
CONTROLS
Mapping Type
Open
Table Mapping
Complete
Name Conversion
Capital
Element Properties
Item Type
Sequence
Mapping
Row Iterator
Value
Element Form
Rqrd Rpt
828
830
836
838
840
842
844
846
848
850
852
854
856
858
860
861
862
863
864
866
868
872
874
876
826

FIG. 25

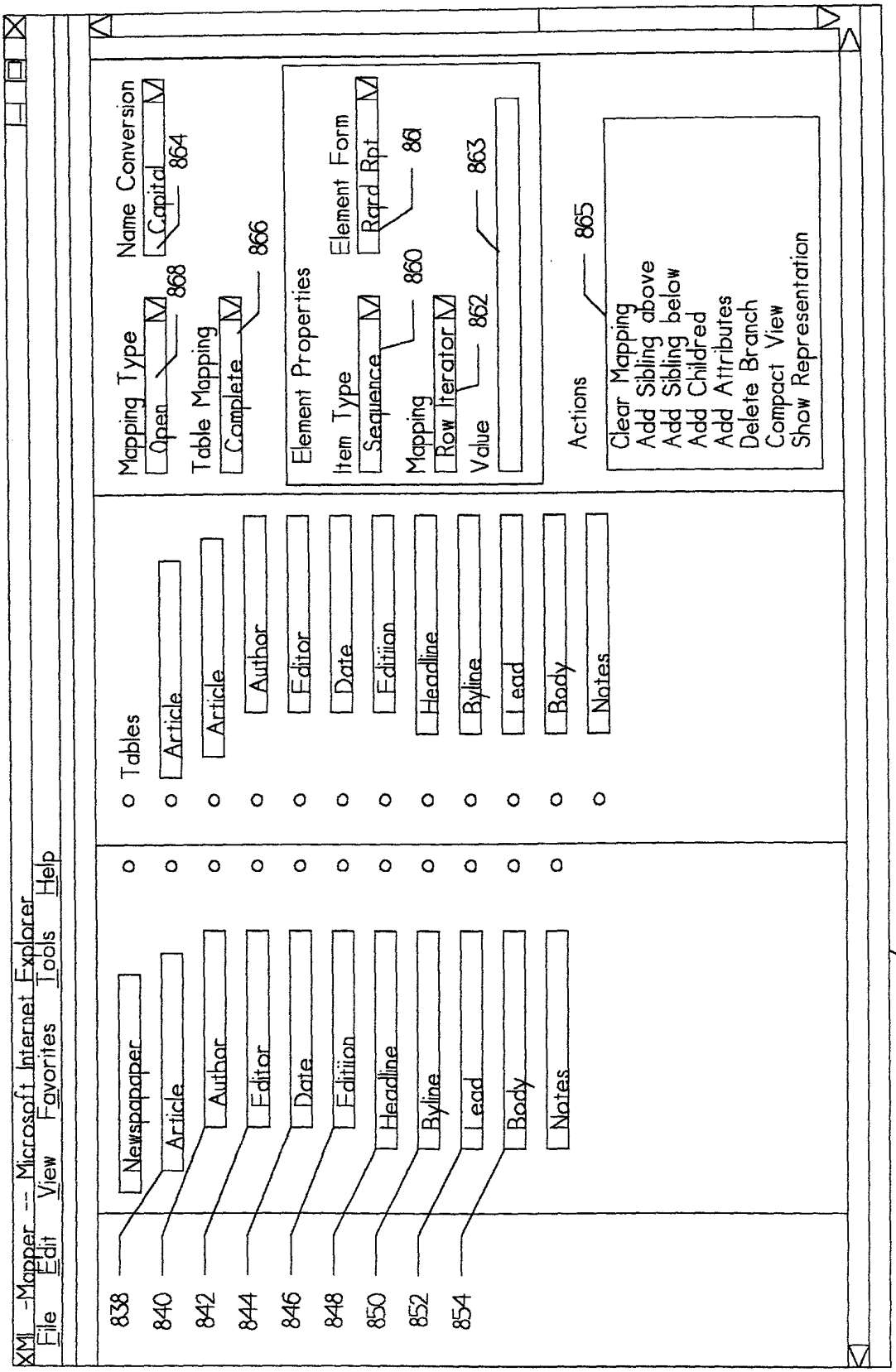
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Tables
Newspapaper
Article
Author
Editor
Date
Edition
Headline
Byline
Lead
Body
Notes
838
840
842
844
846
848
850
852
854
Mapping Type
Open
868
Name Conversion
Capital
864
Table Mapping
Complete
866
Element Properties
Item Type
Sequence
860
Element Form
Rqrd Rpt
861
Mapping
Row Iterator
Value
862
863
Actions
865
Clear Mapping
Add Sibling above
Add Sibling below
Add Childred
Add Attributes
Delete Branch
Compact View
Show Representation
826

FIG. 26

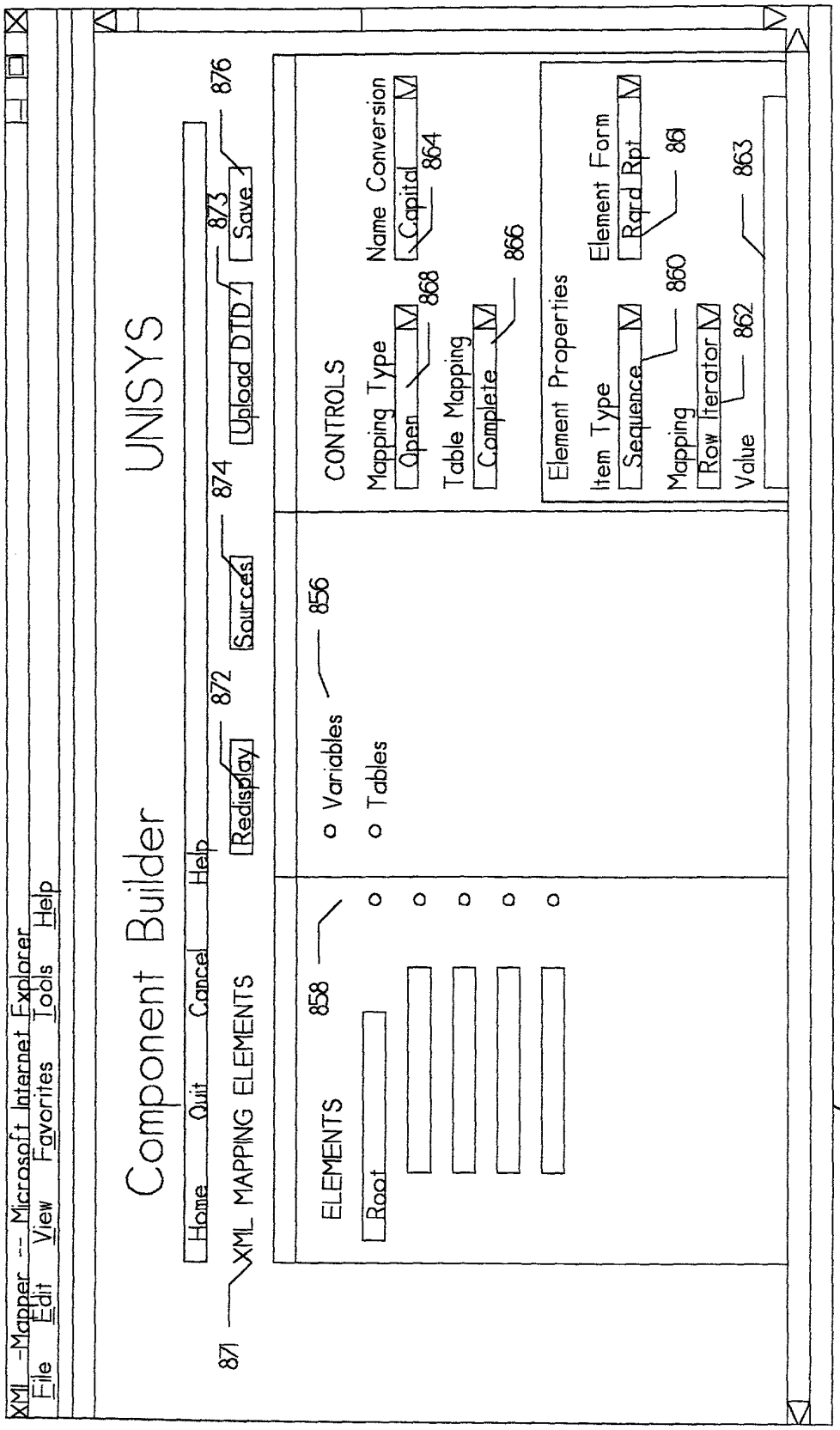
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
Redisplay
Sources
Upload DTD
Save
XML MAPPING ELEMENTS
ELEMENTS
Root
Variables
Tables
CONTROLS
Mapping Type
Open
Table Mapping
Complete
Name Conversion
Capital
Element Properties
Item Type
Sequence
Mapping
Row Iterator
Value
Element Form
Rqrd Rpt
871
872
873
874
876
856
858
860
861
862
863
864
866
868
870

FIG. 27

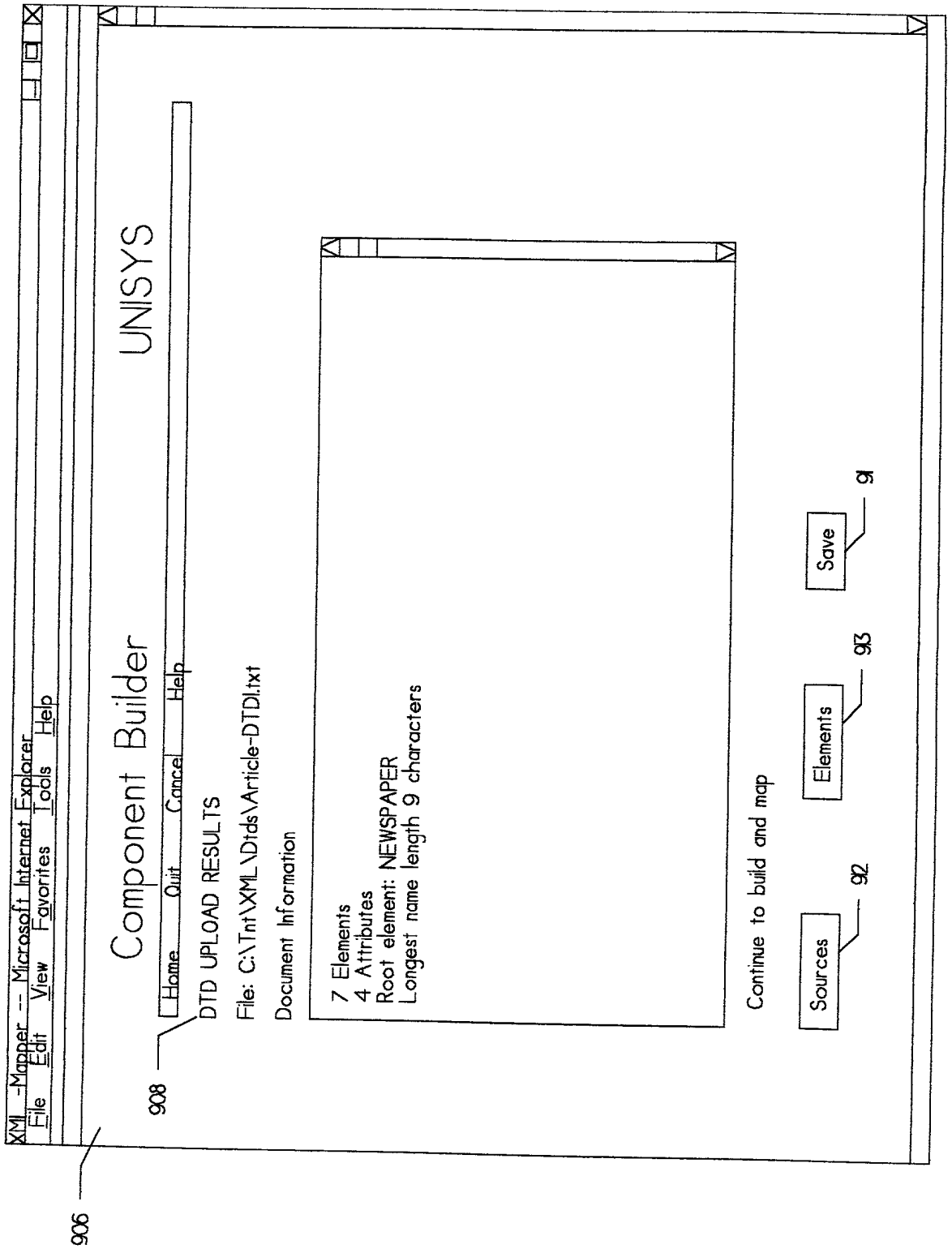
906
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
908
Component Builder
UNISYS
Home Quit Cancel Help
DTD UPLOAD RESULTS
File: C:\Tnt\XML\Dtds\Article-DTDI.txt
Document Information
7 Elements
4 Attributes
Root element: NEWSPAPER
Longest name length 9 characters
Continue to build and map
Sources
92
Elements
93
Save
91

FIG. 28

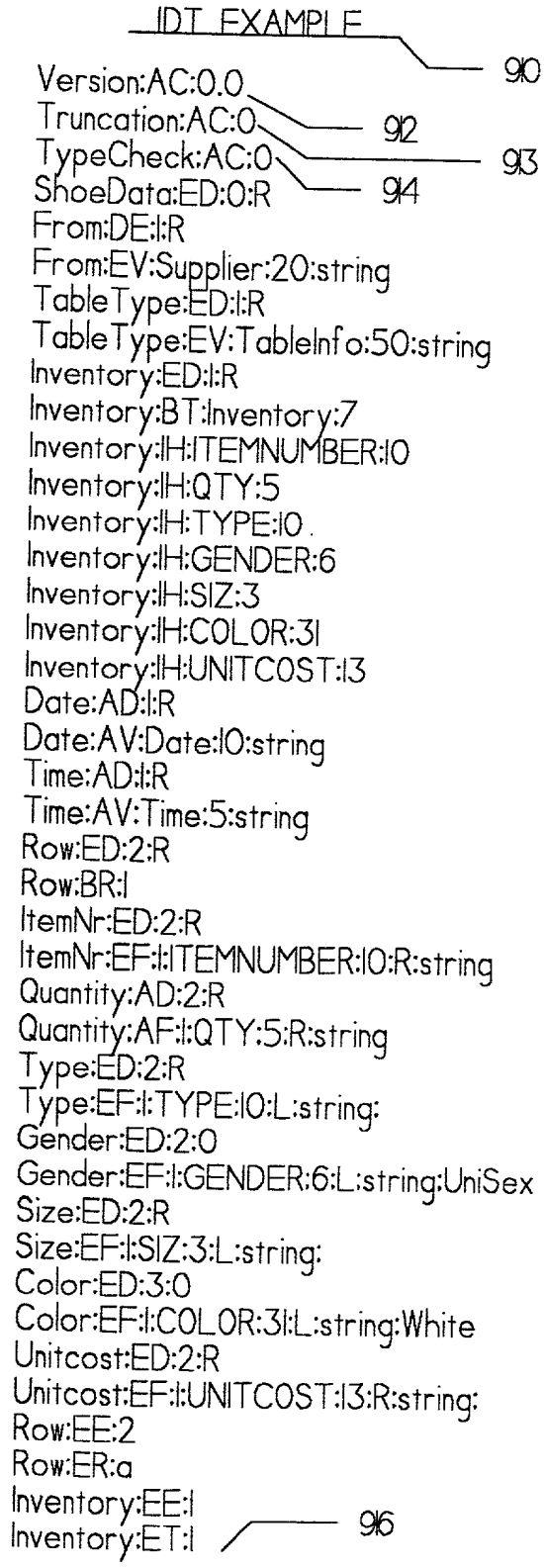
IDT EXAMPLE
90
Version:AC:0.0
Truncation:AC:0
92
TypeCheck:AC:0
93
ShoeData:ED:0:R
94
From:DE:1:R
From:EV:Supplier:20:string
TableType:ED:1:R
TableType:EV:TableInfo:50:string
Inventory:ED:1:R
Inventory:BT:Inventory:7
Inventory:IH:ITEMNUMBER:10
Inventory:IH:QTY:5
Inventory:IH:TYPE:10
Inventory:IH:GENDER:6
Inventory:IH:SIZ:3
Inventory:IH:COLOR:31
Inventory:IH:UNITCOST:13
Date:AD:1:R
Date:AV:Date:10:string
Time:AD:1:R
Time:AV:Time:5:string
Row:ED:2:R
Row:BR:1
ItemNr:ED:2:R
ItemNr:EF:1:ITEMNUMBER:10:R:string
Quantity:AD:2:R
Quantity:AF:1:QTY:5:R:string
Type:ED:2:R
Type:EF:1:TYPE:10:L:string:
Gender:ED:2:0
Gender:EF:1:GENDER:6:L:string:UniSex
Size:ED:2:R
Size:EF:1:SIZ:3:L:string:
Color:ED:3:0
Color:EF:1:COLOR:31:L:string:White
Unitcost:ED:2:R
Unitcost:EF:1:UNITCOST:13:R:string:
Row:EE:2
Row:ER:a
Inventory:EE:1
Inventory:ET:1
96

FIG. 29

Express Mail No. ET970414370US
Customer Assignment No. 27516
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 32 of 40

DTD EXAMPLE 918

```
<!DOCTYPE ShoeData [

  <!ELEMENT ShoeData (From, TableType, Inventory)>
  <!ELEMENT From (#PCDATA)>
  <!ELEMENT TableType (#PCDATA)>
  <!ELEMENT Inventory (Row+)>
  <!ATTLIST Inventory Date CDATA #REQUIRED>
  <!ATTLIST Inventory Time CDATA #REQUIRED>
  <!ELEMENT Row (ItemNr, Type, Gener?, Size, Color?, Unitcost)+>
  <!ELEMENT ItemNr (#PCDATA)>
  <!ATTLIST ItemNr Quantity CDATA #REQUIRED>
  <!ELEMENT Type (#PCDATA)>
  <!ELEMENT Gender (#PCDATA)>
  <!ELEMENT Size (#PCDATA)>
  <!ELEMENT Color (#PCDATA)>
  <!ELEMENT Unitcost (#PCDATA)>
```

FIG. 30

XML INPUT DOCUMENT EXAMPLE — 920

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<ShoeData>
<From>Roseville Store</From>
<TableType>Low Inventory Count</TableType>
<Inventory Date="2000-12-05" Time="11:51">
<Row>
<ItemNr Quantity="0">32335</ItemNr>
<Type>Tennis</Type>
<Gender>Mens</Gender>
<Size>6</Size>
<Color>White/Zen Grey/New Spruce</Color>
<Unitcost>25.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">35410</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>5</Size>
<Color>White/Zen Grey/Neptune Blue</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">3541K</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>6</Size>
<Color>White/Zen Grey/Neptune Blue</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="2">35420</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>5</Size>
<Color>White/Chlorine Blue/Hot Lime</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="1">3742K</ItemNr>
<Type>Golf</Type>
<Gender>Womens</Gender>
<Size>8</Size>
<Color>White/Fluorescent Pink</Color>
<Unitcost>35.00</Unitcost>
</Row>
</Inventory>
</ShoeData>
<Color>White/Black-Hot Lime. Neo Teal</Color>
<Unitcost>40.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">32474</ItemNr>
<Type>Tennis</Type>
<Gender>Womens</Gender>
<Size>8</Size>
<Color>White/Light Marine-Ultramarine</Color>
<Unitcost>25.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="1">35310</ItemNr>
<Type>Running</Type>
<Gender>Mens</Gender>
<Size>6</Size>
```

FIG. 31

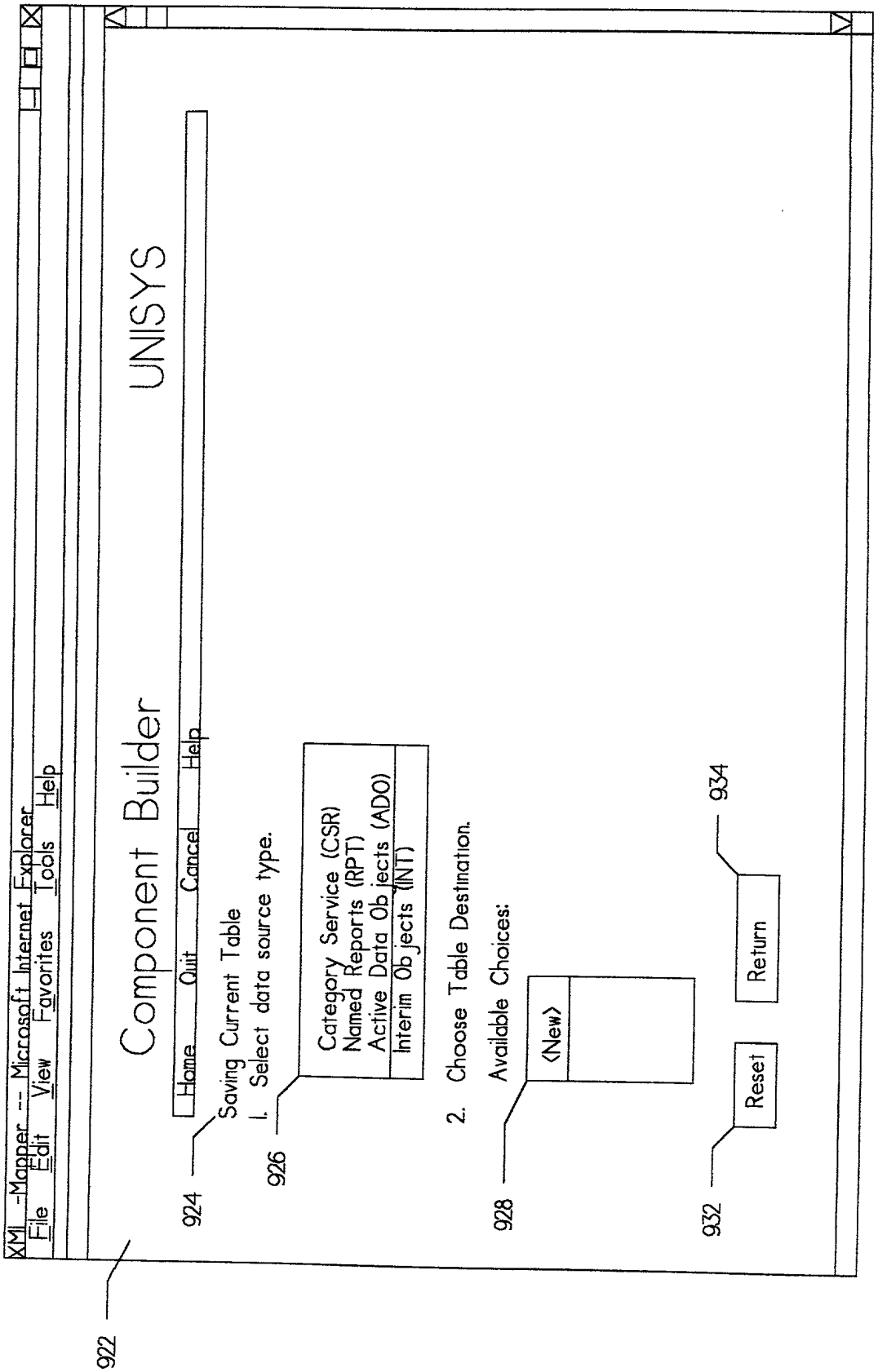
922
XMI -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
924
Saving Current Table
1. Select data source type.
926
Category Service (CSR)
Named Reports (RPT)
Active Data Objects (ADO)
Interim Objects (INT)
2. Choose Table Destination.
Available Choices:
928
<New>
932
Reset
934
Return

FIG. 32

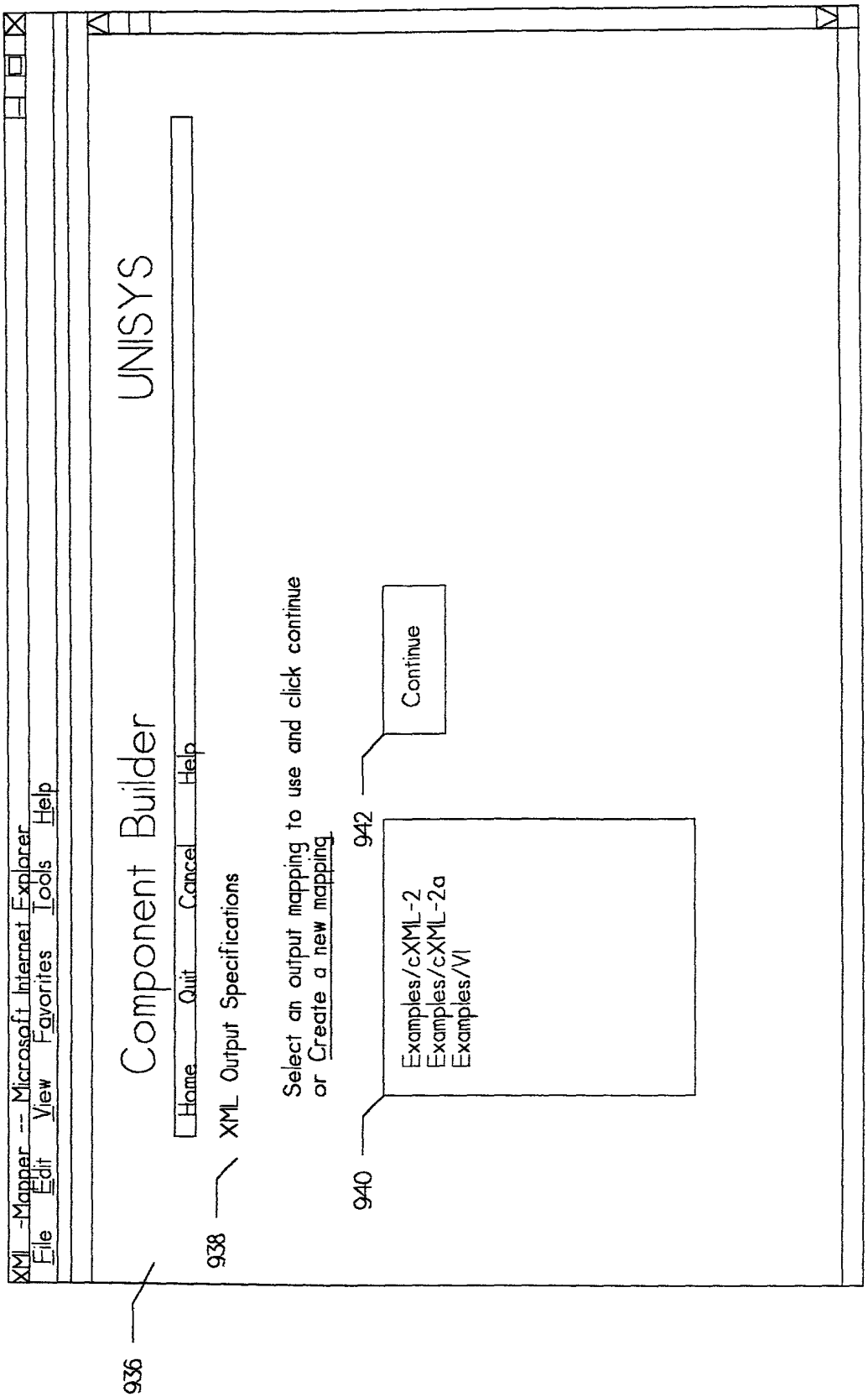
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
UNISYS
Component Builder
Home Quit Cancel Help
XML Output Specifications
Select an output mapping to use and click continue
or Create a new mapping
Continue
Examples/cXML-2
Examples/cXML-2a
Examples/VI
936
938
940
942

FIG. 33

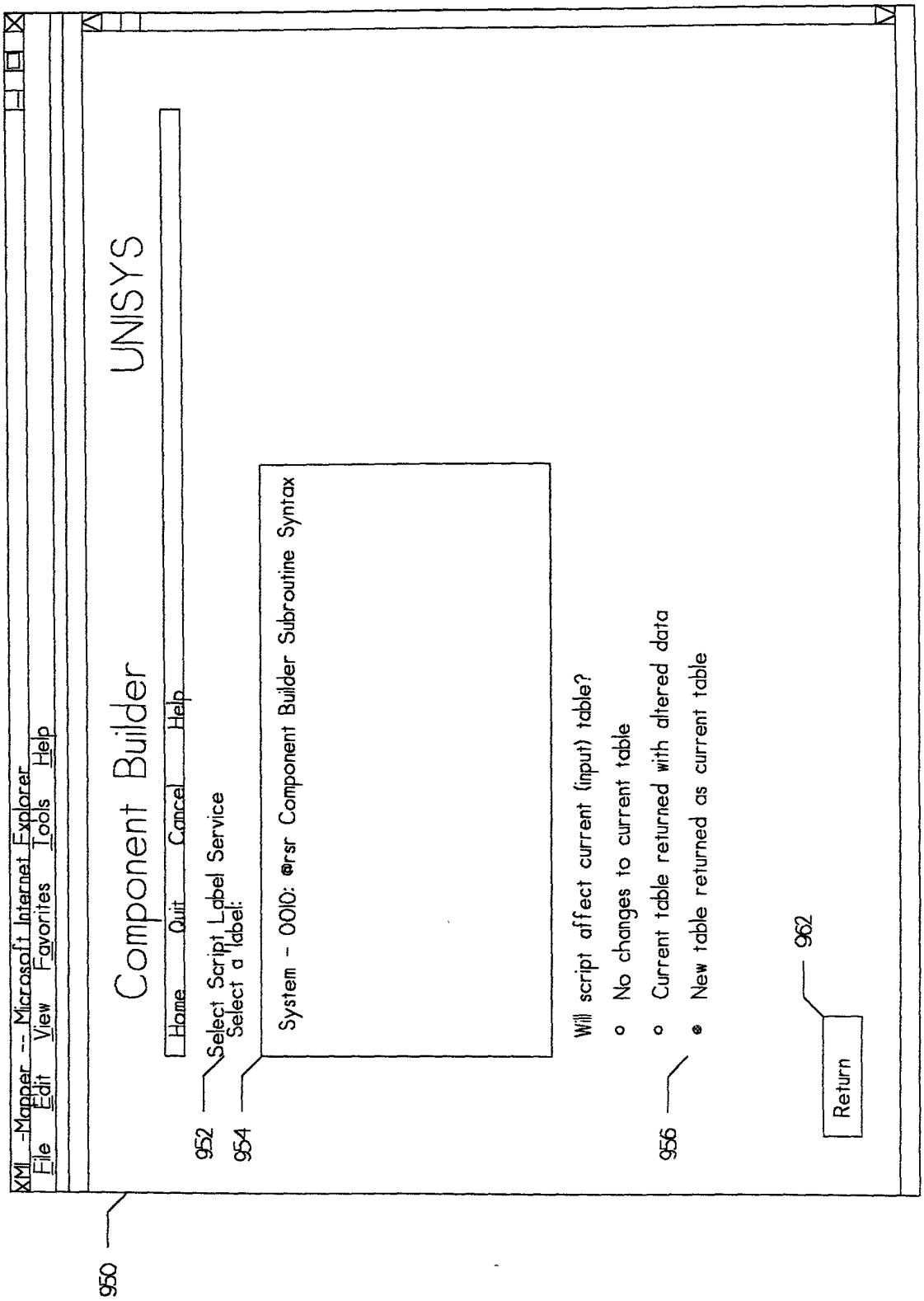
950
XMI -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
952
Select Script Label Service
Select a label:
954
System - 0010: @rsr Component Builder Subroutine Syntax
Will script affect current (input) table?
o No changes to current table
o Current table returned with altered data
956
● New table returned as current table
962
Return

FIG. 34

Express Mail No. ET970414370US
Customer Assignment No. 27516

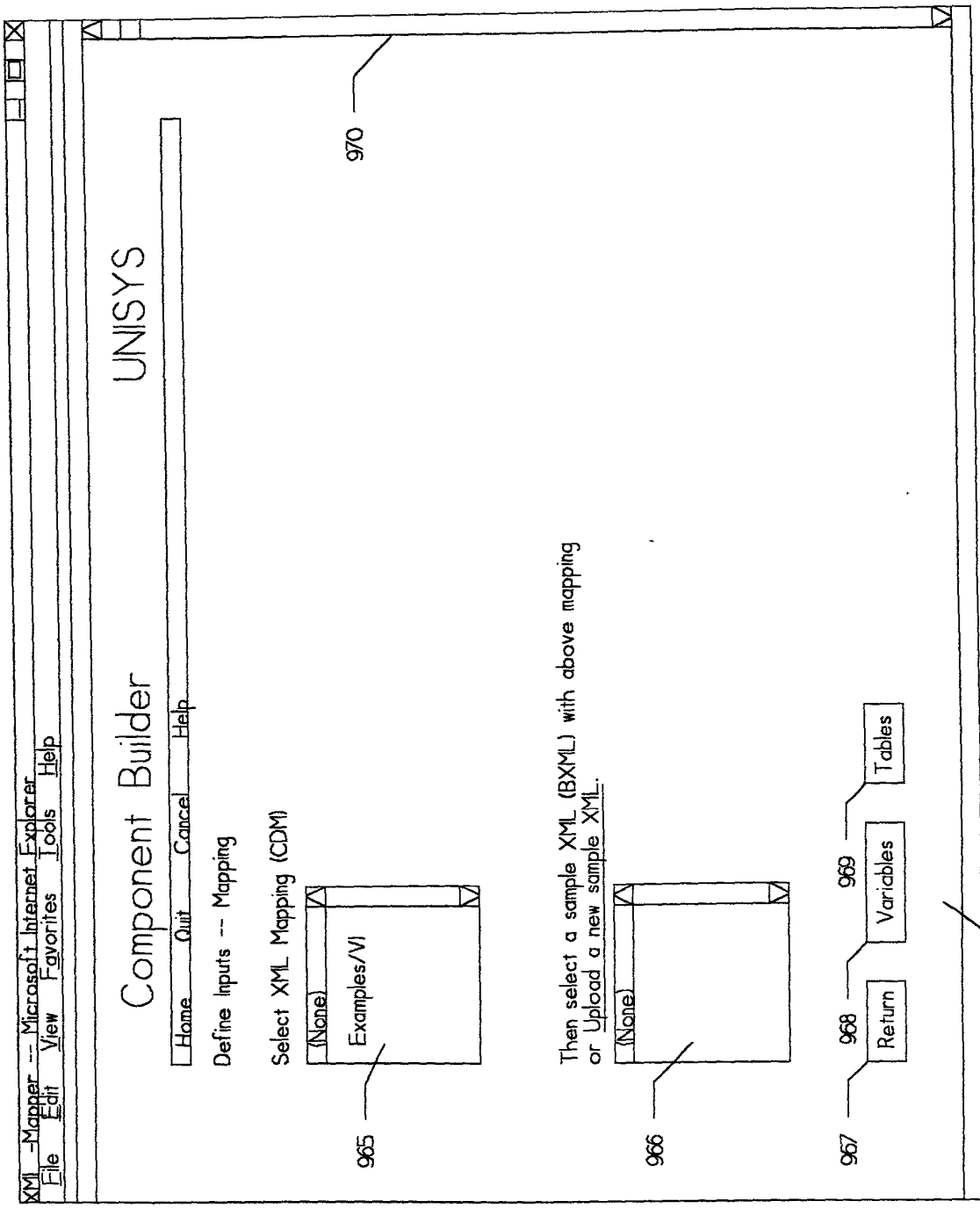

FIG. 35

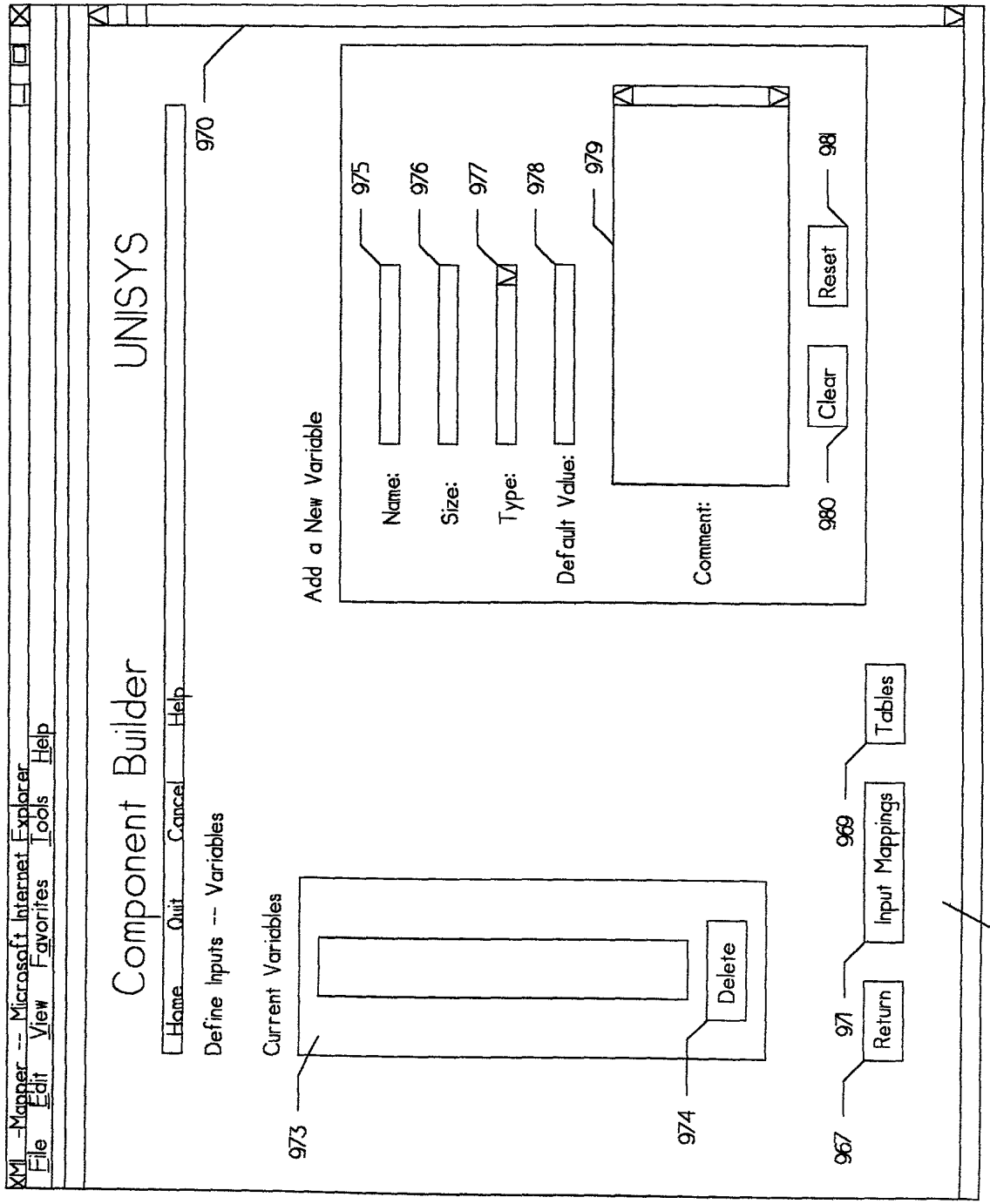
XM1 -Manager -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
Define Inputs -- Variables
Current Variables
Delete
Add a New Variable
Name:
Size:
Type:
Default Value:
Comment:
Clear
Reset
Return
Input Mappings
Tables
970
971
972
973
974
975
976
977
978
979
980
981
967
969

FIG. 36

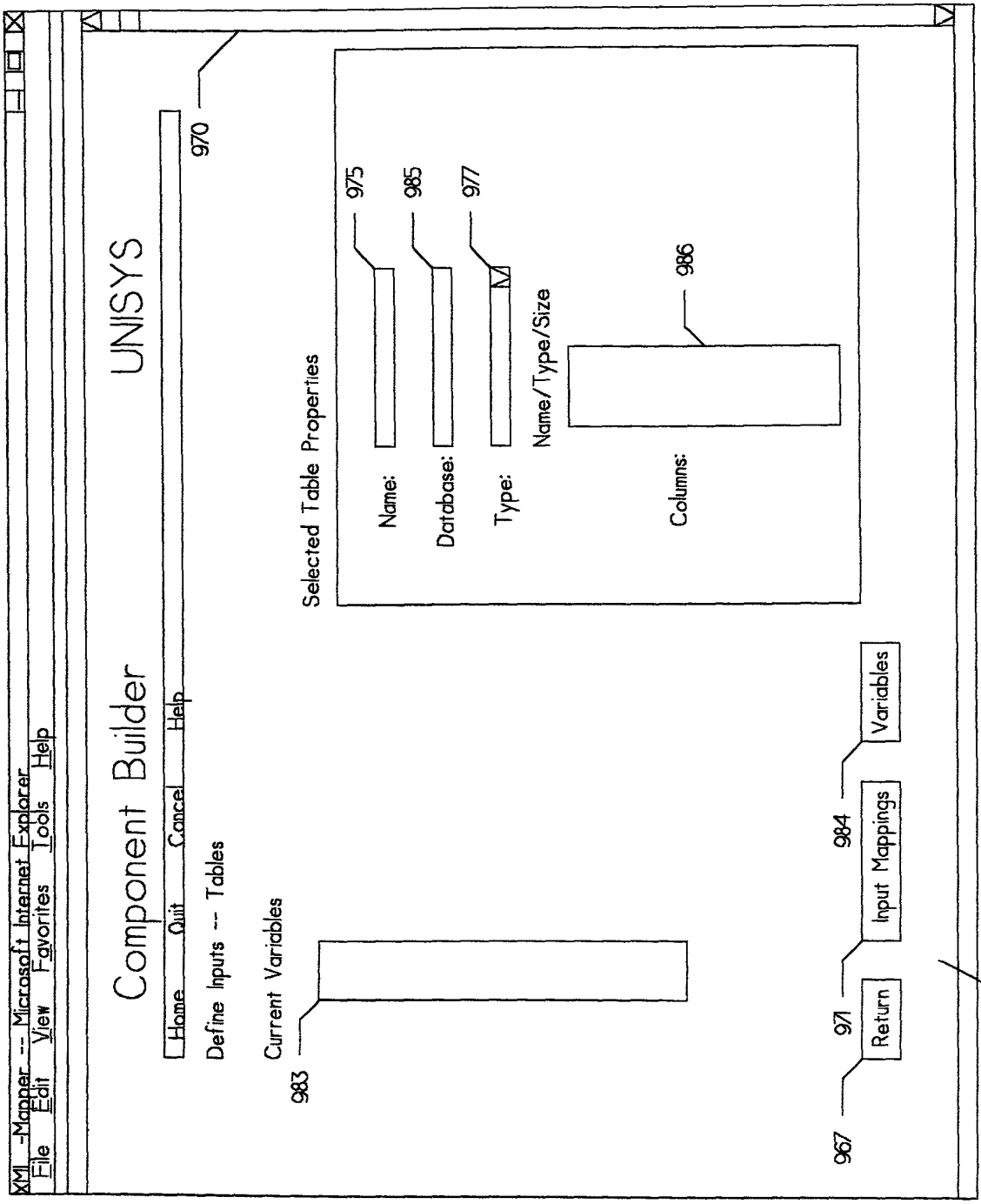
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
970
Define Inputs -- Tables
Current Variables
983
Selected Table Properties
975
Name:
985
Database:
977
Type:
Name/Type/Size
986
Columns:
984
Variables
Input Mappings
971
Return
967
982

FIG. 37

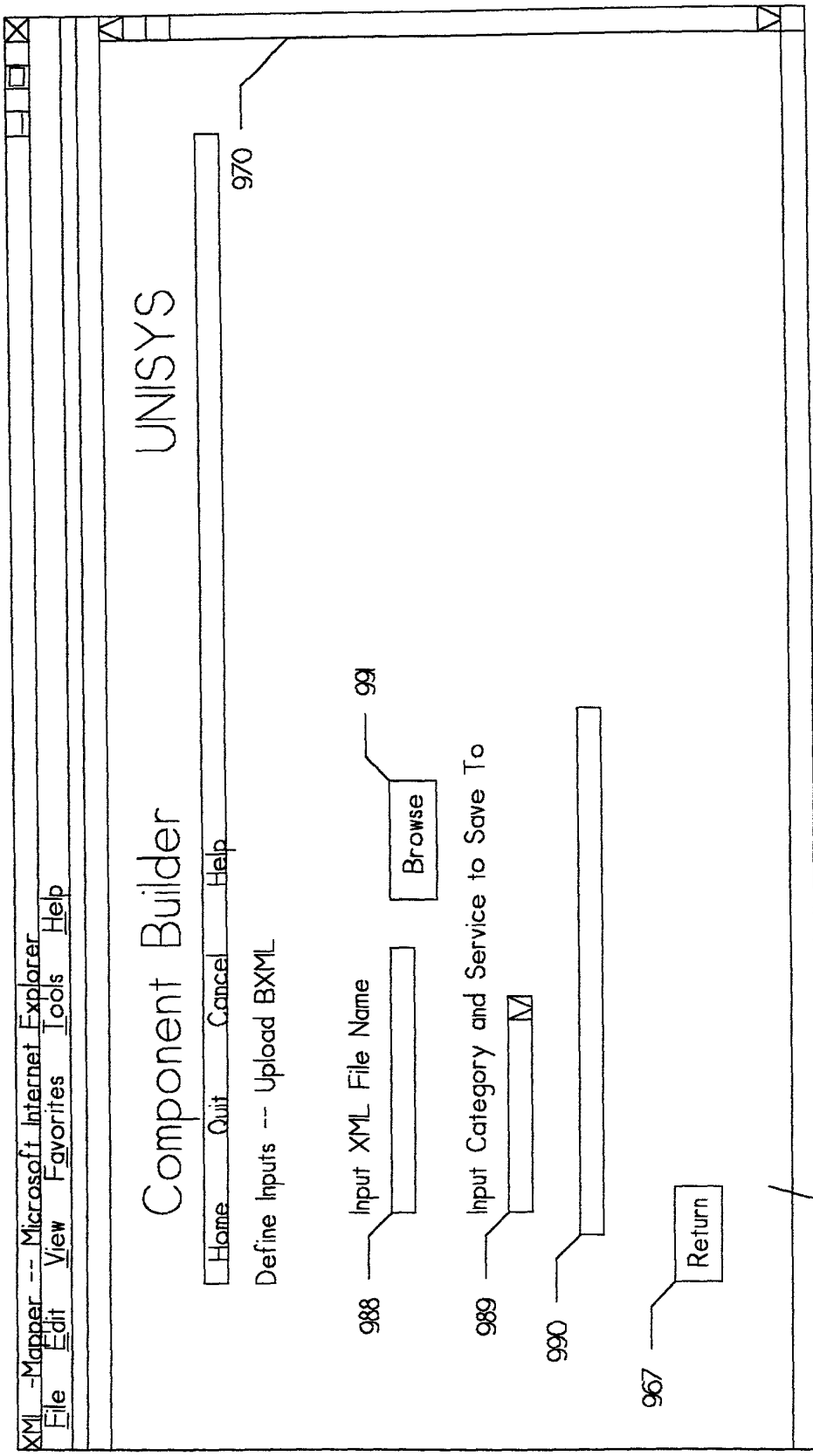
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
UNISYS
970
Component Builder
Home Quit Cancel Help
Define Inputs -- Upload BXML
991
Browse
Input XML File Name
988
Input Category and Service to Save To
989
990
967
Return
987

FIG. 38